



# CHUSKA ENERGY COMPANY

3315 BLOOMFIELD HIGHWAY • FARMINGTON, NEW MEXICO 87401 • PHONE: (505) 326-5525

26 March, 1991

**RECEIVED**

**MAR 29 1991**

**DIVISION OF  
OIL GAS & MINING**

State of Utah Department of Natural Resources  
Division of Oil, Gas and Mining  
355 West North Temple  
3 Triad Building, Suite 350  
Salt Lake City, Utah 84180-1203

Ref: Application for Permit to Drill  
Mule-31K Well, San Juan County, Utah

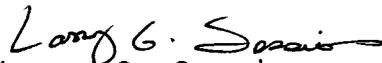
Gentlemen

Attached for your examination and approval is the original and two copies of an Application for Permit to Drill the Mule Well No. 31K in San Juan County, Utah. This well will be drilled as part of an ongoing exploration and development program.

The location for this well falls outside the guidelines for the State of Utah spacing requirements. However, the topography of the area surrounding the desired location and the proximity of the location to a frequently travelled and well maintained road is such as to preclude the well being located in accordance with State requirements and yet remain in a position which will allow the well bore to penetrate geological structures which have been identified by seismic interpretation. We therefore apply for an exception to the General State Spacing requirements on topographic grounds. Chuska Energy controls the acreage surrounding the proposed site, as indicated on the attached land plat.

Please advise if you require additional information concerning this application. Chuska Energy will greatly appreciate your prompt consideration.

Sincerely,

  
Larry G. Sessions  
Operations Manager

LGS/csw  
FILE: C:\WP51\MULE.31K\APDCOVER

encl.

UNITED STATES  
DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK  
 DRILL       DEEPEN       PLUG BACK

b. TYPE OF WELL  
 OIL WELL       GAS WELL       OTHER       SINGLE ZONE       MULTIPLE ZONE

2. NAME OF OPERATOR  
 Chuska Energy Company

3. ADDRESS OF OPERATOR  
 3315 Bloomfield Highway, Farmington, NM 87401

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)  
 At Surface      1650' FSL, 2030' FWL

At proposed prod. zone      Same      NESW

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*  
 6.7 miles South of Montezuma Creek, Utah

15. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT.  
 (Also to nearest drilg. unit line, if any) 1,370'

16. NO. OF ACRES IN LEASE  
 49,997

17. NO. OF ACRES ASSIGNED TO THIS WELL

18. DISTANCE FROM PROPOSED LOCATION TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.  
 4,144'

19. PROPOSED DEPTH  
 5,877' KB Akah

20. ROTARY OR CABLE TOOLS  
 Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)  
 4,939' GR / 4,952' KB

22. APPROX. DATE WORK WILL START\*  
 7-28-91

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12 1/4"	8 5/8"	24 lb	500'	371 sx 'G' + 2% CaCl <sub>2</sub>
7 7/8"	5 1/2"	15.5 lb	5877'	820 sx 'G', 65:35 Poz + 6% Gel

Refer to attached 10-Point Drilling Plan etc.

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DIVISION OF OIL GAS & MINING

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM : If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. SIGNED Christopher S. Hill TITLE Operations Engineer DATE 26 March, 1991

(This space for Federal or State office use)  
 PERMIT NO. 43-037-31617 APPROVAL DATE \_\_\_\_\_

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE: 4/15/91

CONDITIONS OF APPROVAL, IF ANY: \_\_\_\_\_

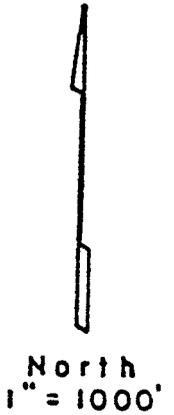
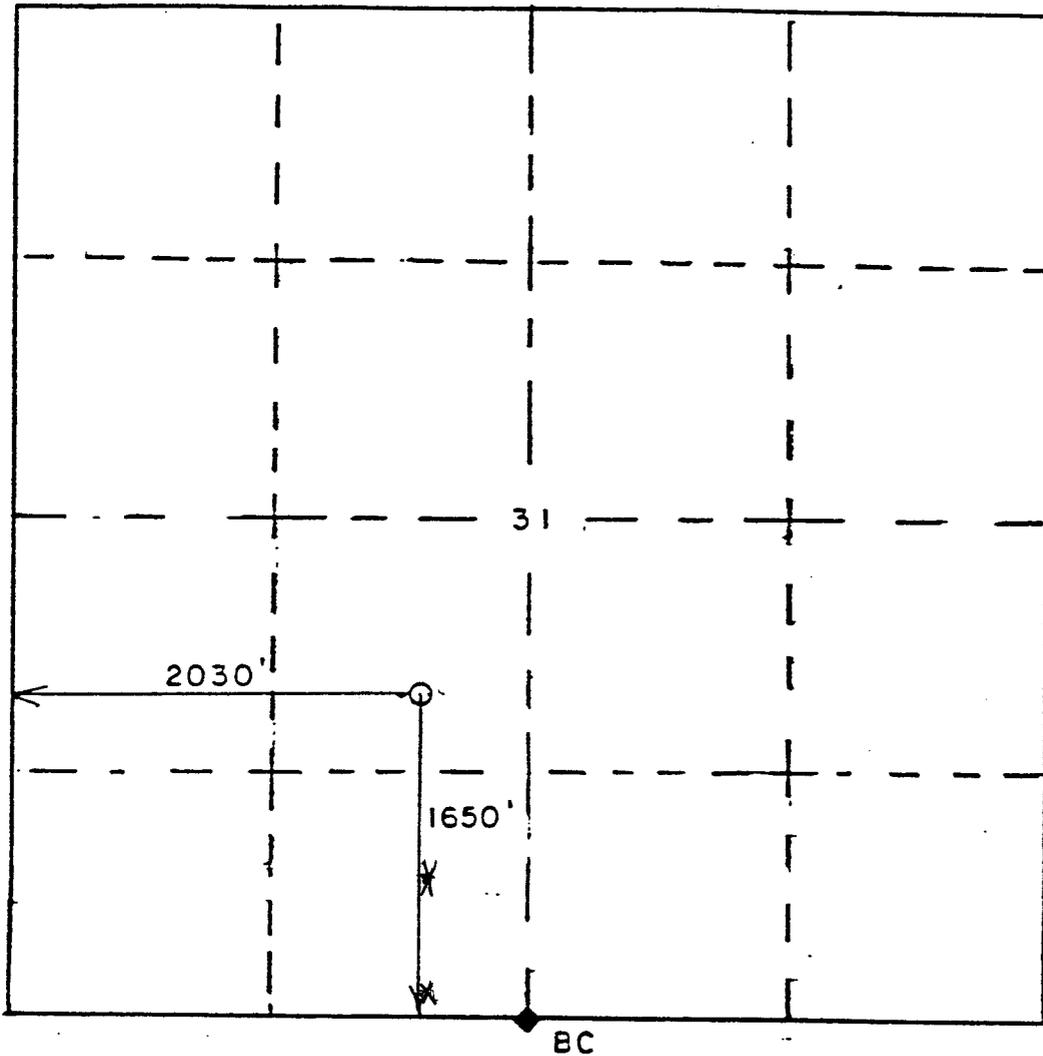
BY: [Signature] DATE: 4/15/91

WELL SPACING: 1615-3-2

\*(See Instructions On Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

WELL LOCATION PLAT



BHL - 695.86 FSL

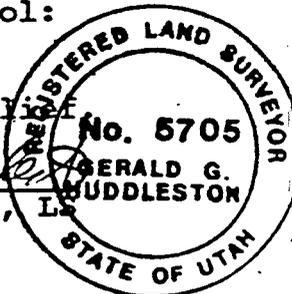
WELL LOCATION DESCRIPTION:

CHUSKA ENERGY CO., Mule 31 - K  
1650' FSL & 2030' FWL  
Section 31, T.41 S., R.24 E., SLM  
San Juan County, UT  
4939' ground elevation  
State plane coordinates from seismic control:  
X = 2,633,718      Y = 193,441

The above is true and correct to my knowledge and belief

4 March 1991

*Gerald G. Huddleston*  
Gerald G. Huddleston, L.S.



## Production Cementing:

### First Stage

T.D. to 3,500' (stage collar @ ± 3,500'). Lead with 174 sx Class 'G' cement, 65:35 Pozmix, with 6% gel and 1/4 lb/sk Celloflake. Weight = 12.7 ppg, yield = 1.85 ft<sup>3</sup>/sk. Tail with 190 sx Class 'G' cement with 2% CaCl<sub>2</sub>. Weight = 15.8 ppg, yield = 1.15 ft<sup>3</sup>/sk. Total of 541 ft<sup>3</sup>. Bring Class 'G' slurry to 500' above top of Upper Ismay. Cement volumes calculated at 30% excess in open hole. WOC 4 hours between stages.

### Second Stage

3,500' to surface. Lead with 355 sx Class 'G' cement, 65:35 Pozmix with 6% gel and 1/4 lb/sk Celloflake. Weight = 12.7 ppg, yield = 1.85 ft<sup>3</sup>/sk. Tail with 100 sx Class 'G' cement with 2% CaCl<sub>2</sub>. Weight = 15.8 ppg, yield = 1.15 ft<sup>3</sup>/sk. Total of 772 ft<sup>3</sup>. Cement volumes calculated at 30% excess in open hole.

Note: Exact slurry volumes for the production string will be adjusted according to the caliper log which will be run prior to cementing. Special adjustments may be necessary if significant amounts of salt are drilled.

## 5. BLOWOUT PREVENTER (See attached schematics)

As abnormal pressure is not anticipated, a 2,000 psi BOP system would be sufficient for the drilling of this well. However, due to availability constraints, a 3,000 psi system will be used, as per the attached Exhibits "A" and "B". This will be a 10" x 900 Series double ram preventer, equipped with a set of pipe and blind rams.

An accumulator system, with a pressure capacity sufficient to operate the rams three complete cycles without rig power, will be required as part of the rig equipment.

## 6. PROPOSED MUD PROGRAM

### Surface to 3,000'

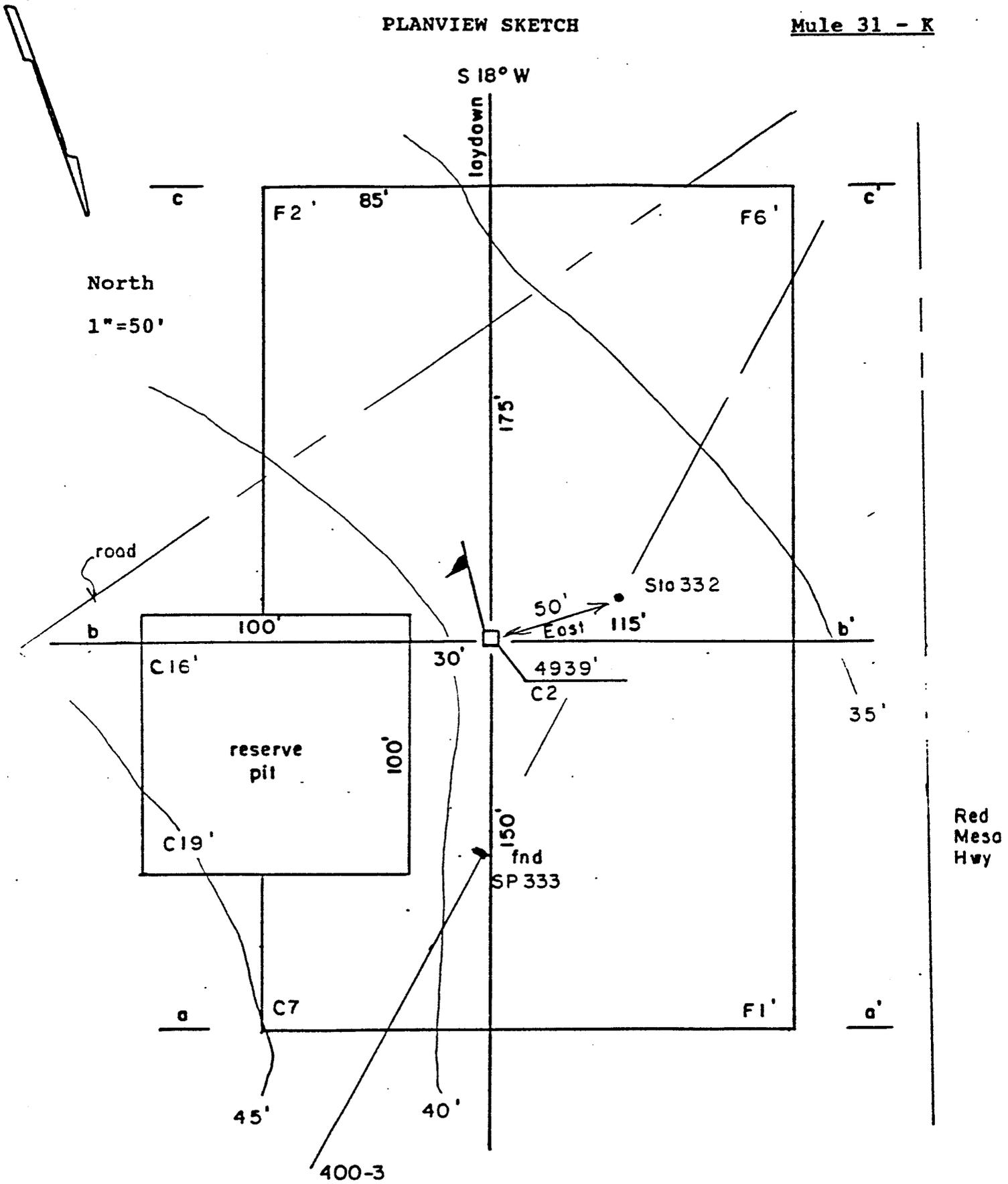
Fresh water, gel, lime and native solids. Weight 8.3 - 8.7 ppg. Gel/lime sweeps as necessary for hole cleaning.

### 3,000' to T.D.

Low solids, non-dispersed polymer system. Weight 8.6 - 9.5 ppg. Gel/lime sweeps as hole conditions dictate for hole cleaning. Fluid loss to be maintained at 15 - 20 cc. Fluid loss to be further reduced to 15 cc or less prior to coring, logging or DSTs.

PLANVIEW SKETCH

Mule 31 - K

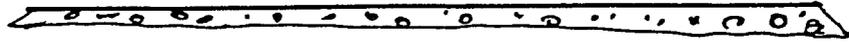


CROSS SECTION

Mule 31 - K

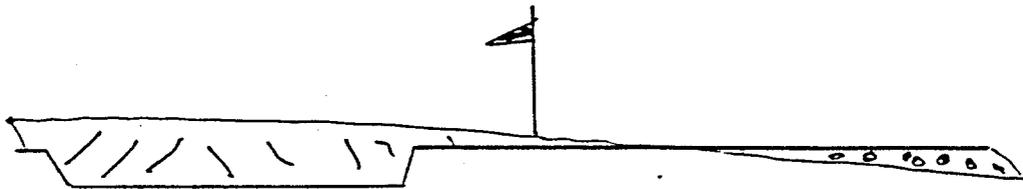
Cut // // // //  
Fill 

1"=50' vert. & horz.



c

c'



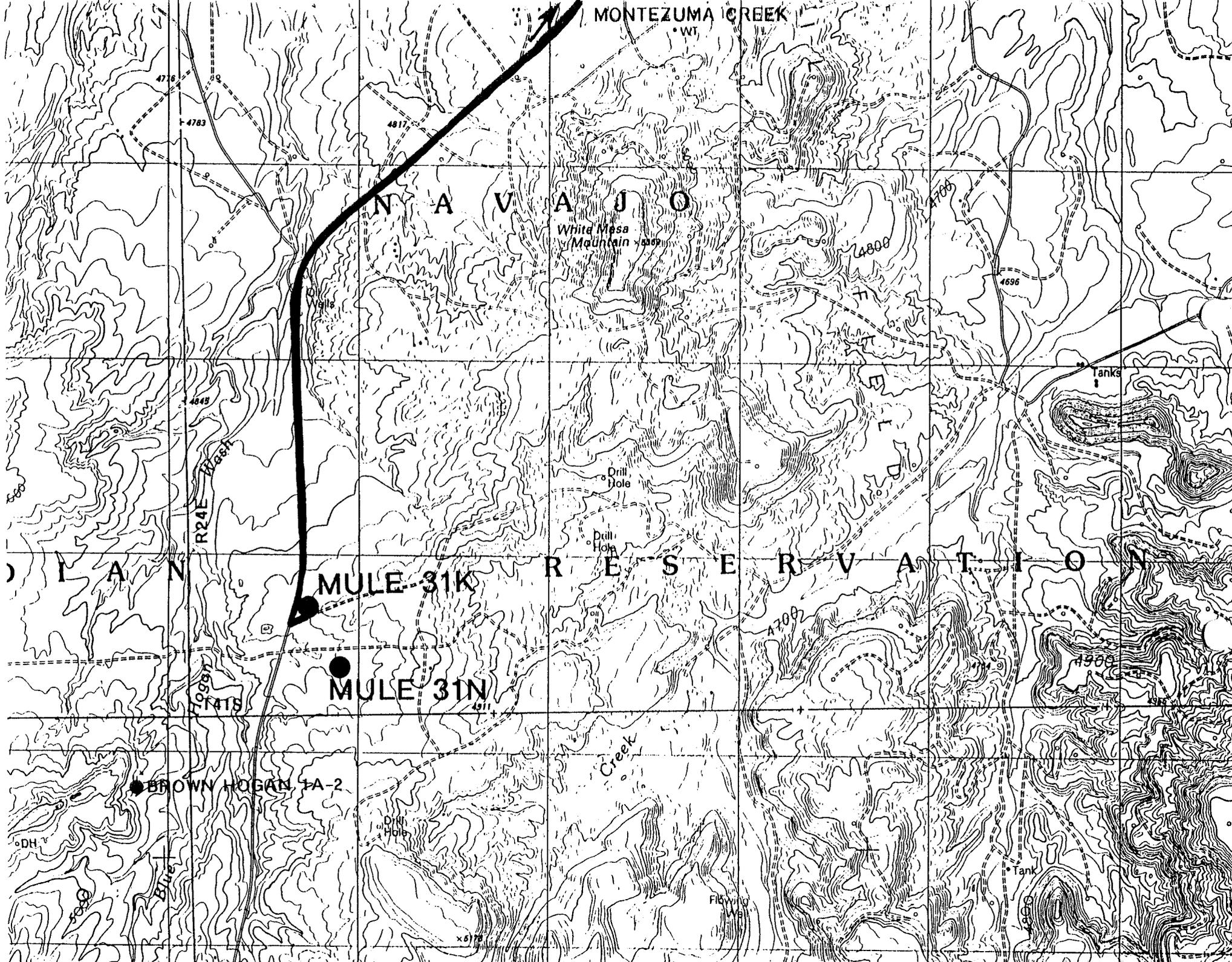
b

b'



a

a'



MONTEZUMA CREEK  
• WT

N A V A J O

White Mesa Mountain

D I L A N R E S E R V A T I O N

MULE 31K

MULE 31N

BROWN HOGAN 1A-2

x 6178

7. AUXILIARY EQUIPMENT

- A. A kelly cock will be installed during drilling operations, with handle available on the rig floor.
- B. Floor (stabbing) valves will be available, on the rig floor at all times, with necessary subs to fit all of the drilling assemblies.
- C. Mud will be the circulating fluid. No abnormal formation pressures are expected.

8. WELL EVALUATION

Open hole electric logging program will consist of a minimum program of DLL-MSFL-SP-GR-Cal, FDC-CNL-GR-Lithodensity from T.D. to 4,500'.

Coring and/or drill stem testing will be as per the wellsite geologist's recommendations, based on shows. A mud logging unit will be utilized during drilling operations from at least 500' above the Upper Ismay.

9. ABNORMAL PRESSURES/GAS

Abnormal pressures are not anticipated. Monitoring of gas and hydrocarbon shows will be by wellsite mud logging unit. H<sub>2</sub>S gas is not anticipated, however regular checks will be made while drilling the well.

10. TIMING

The drilling and evaluation of this well is estimated to be 18 days. Anticipated spud date is 7-28-91.

EXHIBIT "A"

BLOWOUT PREVENTER

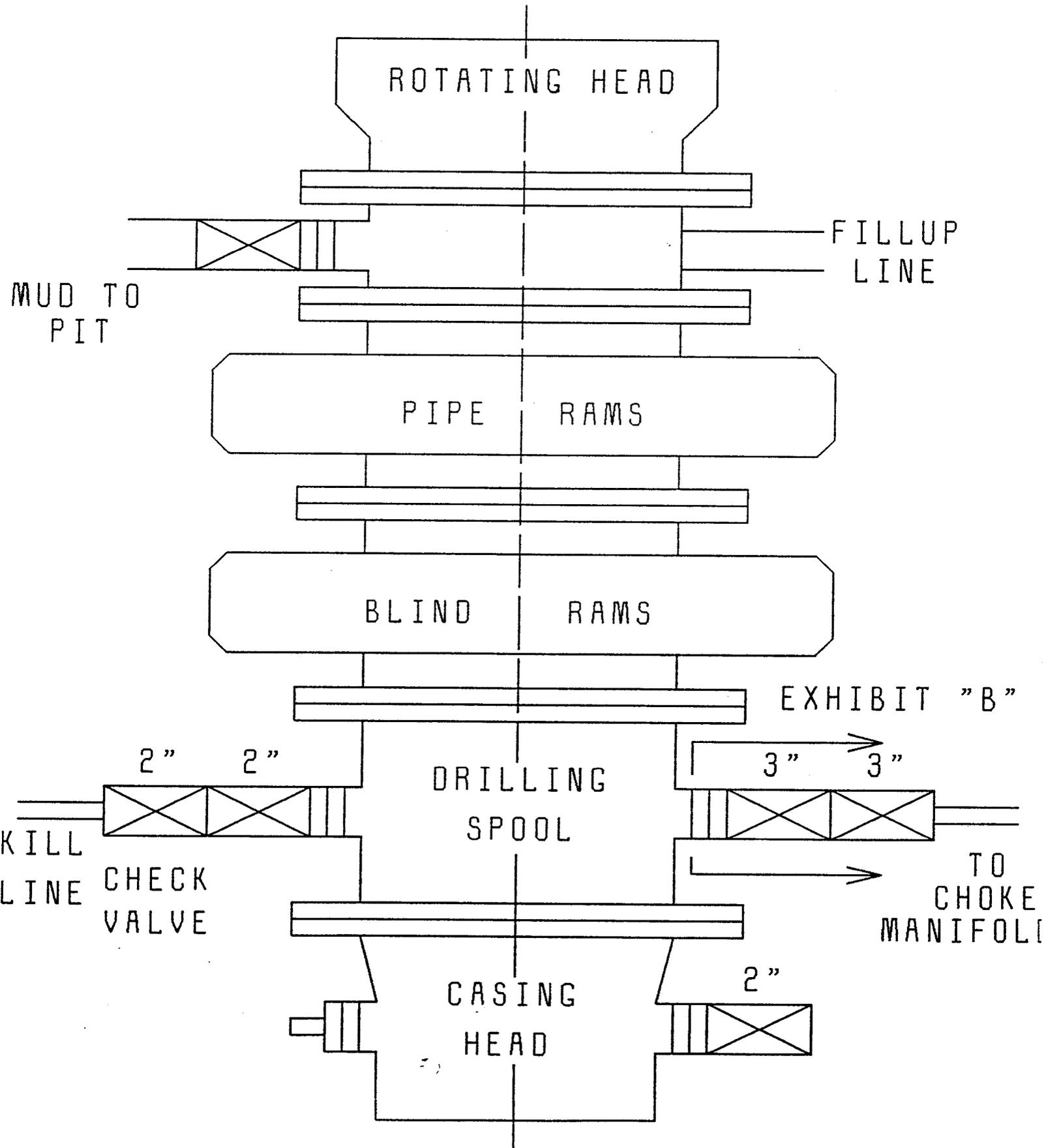
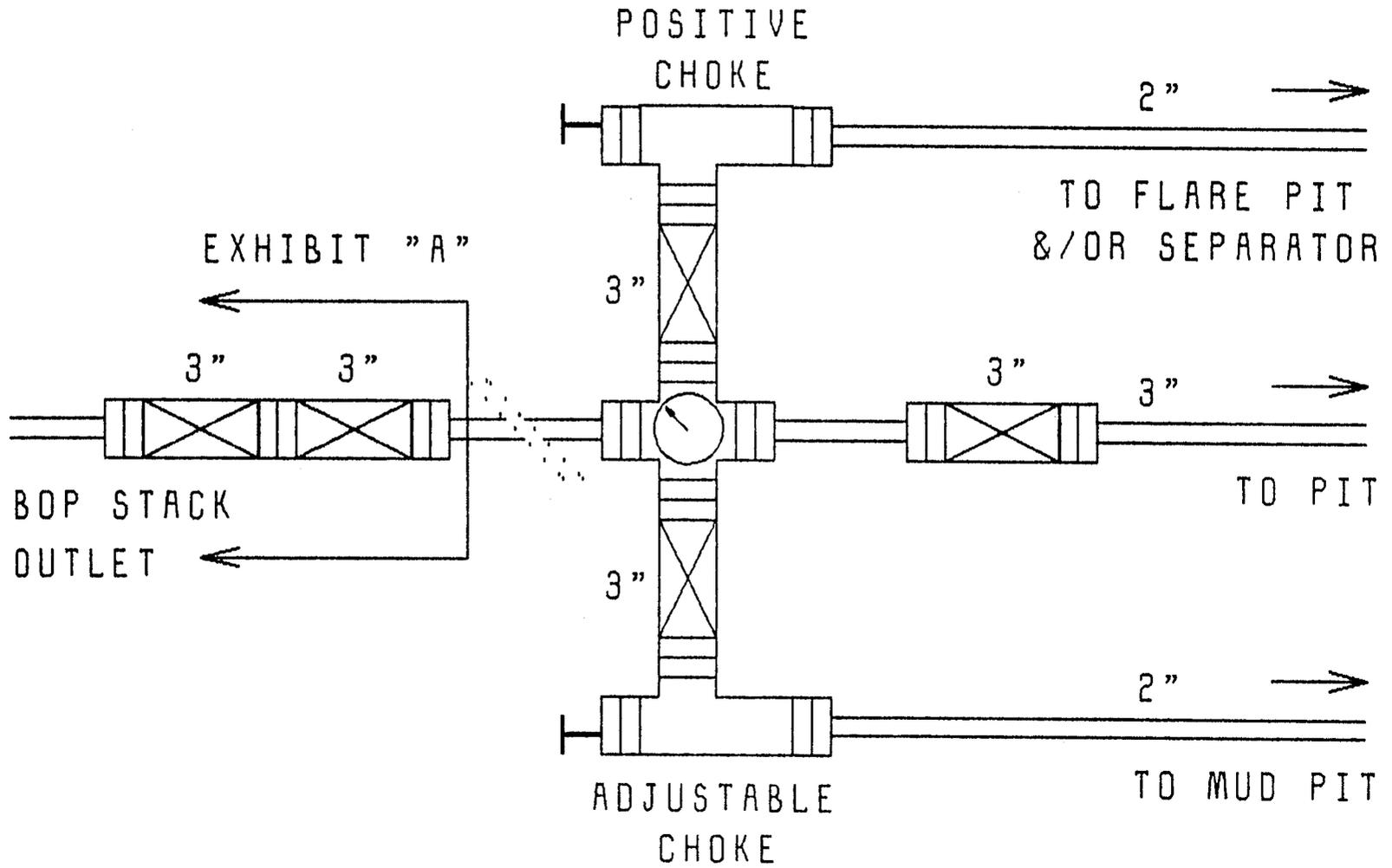


EXHIBIT "B"  
CHOKE MANIFOLD



## DETAILED DRILLING PROGRAM

DATE: 26 March, 1991

WELL NAME: Mule WELL NO.: 31K

LOCATION: Section 31, Township 41S, Range 24E  
1650' FSL, 2030' FWL  
San Juan County, Utah

ELEVATION: 4,939' GR / 4,952' KB

TOTAL DEPTH: 5,877' GR

PROJECTED HORIZON: Primary target is Desert Creek at 5,592'.

### DRILLING, CASING AND CEMENTING PROGRAM

1. Move in and rig up rotary tools. Notify BLM of time of spud and intent to run surface casing.
2. Drill mouse hole and rat hole. Mix mud prior to spudding well.
3. Drill 12 1/4" hole to  $\pm$  500'. Use fresh water gel/lime spud mud for drilling surface hole. Well bore inclination is not to exceed 1° at 500'. Deviation surveys will be run at least at 250' and at casing point.
4. Run 8 5/8", 24 lb/ft, K-55, STC casing to T.D. Cement with 371 sx (427 ft<sup>3</sup>) of Class 'G' cement with 2% CaCl<sub>2</sub> and 1/4 lb/sk Celloflake (sufficient slurry volume to circulate cement to surface).
5. W.O.C. a minimum of 4 hours prior to nipping up BOP stack and related equipment. See BOP schematics for details.
6. Ensure that plug has been down at least 8 hours prior to commencing pressure testing procedures. Pressure test BOP to 2,000 psig for 30 minutes. Pressure test manifold and all related equipment to 2,000 psig. Pressure test casing to 1,500 psig for 30 min.
7. Drill out surface casing with 7 7/8" bit. Drill 7 7/8" hole to T.D. Deviation surveys are to be taken every 500' or on a bit trip, whichever occurs first. Maximum allowable deviation will be 5° at T.D., with the maximum allowable rate of change to be 1°/100'.
8. Run open hole logs and evaluate. Coring and/or drill stem testing will be as per wellsite geologist's recommendation.

9. If the well is determined to be productive, run 5 1/2", 15.5 lb/ft, K-55, STC casing to T.D. Set stage cementing collar at  $\pm$  3,500'. In addition to placing centralizers over potential production zones, they will also be run to cover the aquifer sands of the Navajo and DeChelly formations, as per BLM stipulations. Cement production casing in two stages as per cementing program in 10-point Drilling Plan.
10. Nipple down BOPE. Set 5 1/2" casing slips and cut off casing. Install well head. Release drilling rig and move rig off location.
11. If well is non-productive it will be plugged and abandoned as per State, BLM and Navajo Tribal stipulations.

Mule Well No. 31K  
Section 31, Township 41S, Range 24E  
1650' FSL, 2030' FWL  
San Juan County, Utah

GENERAL COMPLETION PROCEDURE

If the well is determined to be productive, move in completion rig. Perforate, acidize, and test each productive porosity zone. Completion work will commence after Sundry Notice approval is received. Detailed procedures will follow.

PLUGGING AND ABANDONMENT

If the well is determined not to be productive, the well bore will be plugged as per BLM, State and Navajo Tribal requirements.

Mule Well No. 31K  
Section 31, Township 41S, Range 24E  
1650' FSL, 2030' FWL  
San Juan County, Utah

SURFACE USE PLAN

1. EXISTING ROADS

Shown on the attached topographic map are the existing roads in the immediate area. Outlined is the route to be followed from Montezuma Creek. Existing roads will be maintained, as necessary, while operations are in progress.

2. PLANNED ACCESS ROAD

The access road will be off an existing bladed road, as shown on the attached topographic map. The road will be maintained as necessary to prevent excessive damage to the existing terrain. The road will be upgraded if commercial production is established. Owing to the proximity of the well to existing roads, it is anticipated that less than 100' of new road will need to be constructed to the location pad.

3. LOCATION OF EXISTING WELLS & TANK BATTERIES

The nearest producing well is the Blue Hogan 1J-1, located approximately 1.3 miles South West of the proposed location.

4. LOCATION OF EXISTING AND PROPOSED FACILITIES

No production facilities are presently in place. Should the well prove to be productive, facilities (tank battery etc) will be sited on the drilling location pad.

5. LOCATION & TYPE OF WATER SUPPLY

Water will be acquired from the San Juan River or McElmo Creek and will be hauled using Chuska Energy Company water trucks, under State of Utah Division of Water Rights Permit Numbers 09-1724, (T64796) or 09-1723 (T64795).

6. SOURCE OF CONSTRUCTION MATERIALS

The need for additional construction materials is not anticipated. In the event that additional materials are required, they will be acquired either from private sources or with the approval of the Navajo Nation.

7. METHODS OF HANDLING WASTE MATERIAL

Trash will be contained on location in an enclosed bin. It will be hauled to an approved disposal site or burned on location if a burning permit is granted. The reserve pit will be lined as required, with an approved 7 mil liner, for containing drilling fluids. The pit will also be fenced. All drilling fluids, cuttings and chemical waste will be stored in the reserve pit. Liquid hydrocarbons will be stored in temporary storage tanks and hauled from location to approved sales facilities. The reserve pit will be emptied, back filled and restored to natural terrain status upon completion of drilling operations.

8. ANCILLARY FACILITIES

Chemical portable toilet facilities will be provided on location during drilling and completion operations. No camps or air strips are planned for this well.

9. WELL SITE LAYOUT

Attached is a surveyor's staking plat, cut and fill diagram and a schematic of the proposed rig layout.

10. PLANS FOR RESTORATION OF THE SURFACE

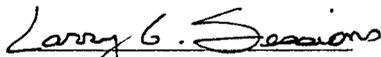
The location is laid out on a generally north/south trend and will require up to 19' of cut in the reserve pit (up to 7' of cut in the north eastern corner of the location pad) and up to 6' of fill in the south western corner of the location pad. Top soil removed from the pad will be stored at the well site. A reserve pit will be built on terrain containing sparse native vegetation. After drilling operations are complete, drilling fluid in the reserve pit will be allowed to evaporate. All remaining fluid in the pit will be disposed of into an approved disposal site. The reserve pit will remain fenced during the evaporation and disposal process. The pit will then be covered and the topsoil will be returned to the disturbed area. The terrain will be returned as near to its original condition as possible. Following operations, rehabilitation seeding will be in accordance with APD/BLM/BIA stipulations. There are no residents in the immediate area of the site.

11. OPERATORS REPRESENTATIVE

CHUSKA ENERGY COMPANY  
3315 BLOOMFIELD HIGHWAY  
FARMINGTON, NEW MEXICO 87401  
LARRY G. SESSIONS

12. CERTIFICATION

I hereby certify that either I, or persons under my direct supervision have inspected the proposed drill site and access route: that I am familiar with the conditions which presently exist: that the statements made in this plan are, to the best of my knowledge, true and correct and that the work planned will be performed by Chuska Energy, or its sub-contractors, in conformity with the terms and conditions under which it is approved.

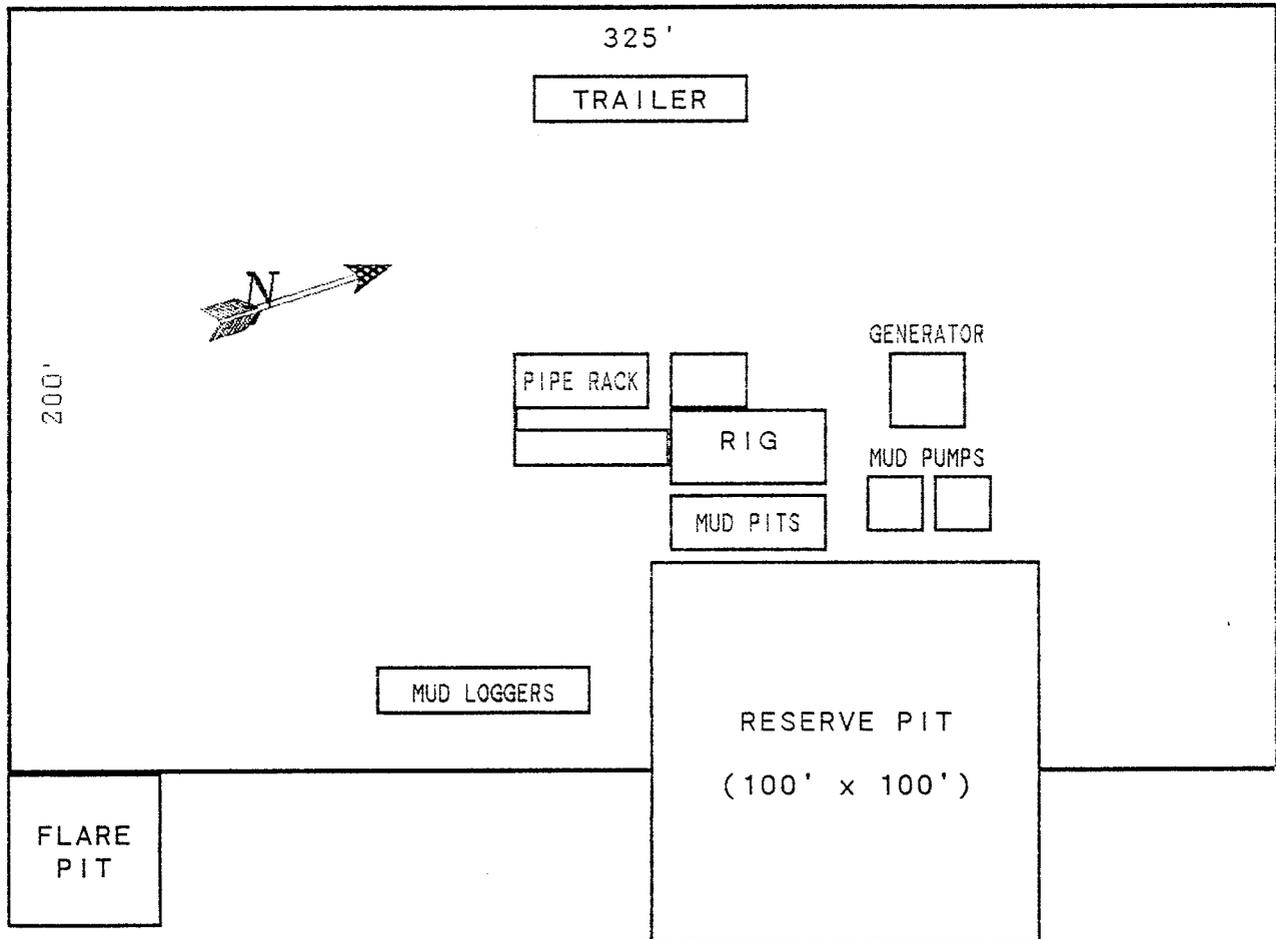
  
LARRY G. SESSIONS  
Operations Manager

# MULE-31K

1650' FSL, 2030' FWL

SECTION 31, TOWNSHIP 41S, RANGE 24E

SAN JUAN COUNTY, UTAH



OPERATOR Omaha Energy Co N- 9090 DATE 4-8-91

WELL NAME Mud 31K

SEC NE SW 31 T 41S R 4E COUNTY San Juan

43-037-31617  
API NUMBER

Indian (w)  
TYPE OF LEASE

CHECK OFF:

PLAT.

BOND

NEAREST WELL

LEASE

FIELD SLBM

POTASH OR OIL SHALE

PROCESSING COMMENTS:

No other well within sec 31.  
Water Permit 09-1704 (TU4796) or 09-1703 (TU4795)  
Exemption location requested

APPROVAL LETTER:

SPACING:

R615-2-3

N/A  
UNIT

R615-3-2

N/A  
CAUSE NO. & DATE

R615-3-3

STIPULATIONS:

CC: BIA

CONFIDENTIAL  
PERIOD  
EXPIRED  
ON 12-5-92



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

Norman H. Bangarter  
Governor  
Dee C. Hansen  
Executive Director  
Dianne R. Nielson, Ph.D.  
Division Director

355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
801-538-5340

April 10, 1991

Chuska Energy Company  
3315 Bloomfield Highway  
Farmington, New Mexico 87401

Gentlemen:

Re: Mule 31K Well, 1650 feet from the South line, 2030 feet from the West line, NE SW, Section 31, Township 41 South, Range 24 East, San Juan County, Utah

Approval to drill the referenced well is hereby granted in accordance with Utah Admin. R.615-3-3.

In addition, the following actions are necessary to fully comply with this approval:

1. Spudding notification within 24 hours after drilling operations commence.
2. Submittal of Entity Action Form 6, within five working days following spudding and whenever a change in operations or interests necessitates an entity status change.
3. Submittal of the Report of Water Encountered During Drilling, Form 7.
4. Prompt notification in the event it is necessary to plug and abandon the well. Notify R. J. Firth, Associate Director, (Office) (801) 538-5340, (Home) 571-6068, or J. L. Thompson, Lead Inspector, (Home) 298-9318.
5. Compliance with the requirements of Utah Admin. R.615-3-20, Gas Flaring or Venting.

Page 2  
Chuska Energy Company  
Mule 31K  
April 10, 1991

6. Prior to commencement of the proposed drilling operations, plans for facilities for disposal of sanitary wastes at the drill site shall be submitted to the local health department. These drilling operations and any subsequent well operations must be conducted in accordance with applicable state and local health department regulations. A list of local health departments and copies of applicable regulations are available from the Division of Environmental Health, Bureau of Drinking Water/Sanitation, telephone (801) 538-6159.
7. This approval shall expire one (1) year after date of issuance unless substantial and continuous operation is underway or an application for an extension is made prior to the approval expiration date.

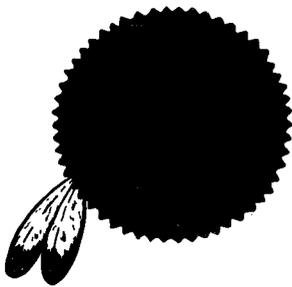
The API number assigned to this well is 43-037-31617.

Sincerely,



R. J. Firth  
Associate Director, Oil & Gas

tas  
Enclosures  
cc: Bureau of Land Management  
Bureau of Indian Affairs  
J. L. Thompson  
we14/1-4



# CHUSKA ENERGY COMPANY

3315 BLOOMFIELD HIGHWAY • FARMINGTON, NEW MEXICO 87401 • PHONE: (505) 326-5525

12 April, 1991

State of Utah Department of Natural Resources  
Division of Oil, Gas and Mining  
355 West North Temple  
3 Triad Building, Suite 350  
Salt Lake City, Utah 84180-1203

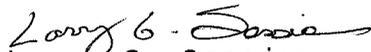
Ref: Sundry Notice: Mule-31-K Well  
Change of Name

Gentlemen

Attached for your examination and approval are the original and two copies of the subject Sundry Notice.

Please advise if you require additional information concerning this submission.

Sincerely,

  
Larry G. Sessions  
Operations Manager

LGS/csw  
File: C:\WP51\MULE.31K\NAMESUN.CVR

encl.

**RECEIVED**

APR 17 1991

DIVISION OF  
OIL GAS & MINING

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

6. Lease Designation and Serial Number  
NOG 8702-1116

7. Indian Allottee or Tribe Name  
Navajo Tribal

8. Unit or Communitization Agreement

9. Well Name and Number  
Mule 31-K

10. API Well Number  
42-037-31617 *del*

11. Field and Pool, or Wildcat  
Wildcat

**SUNDRY NOTICES AND REPORTS ON WELLS**  
Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells.  
Use APPLICATION FOR PERMIT-- for such proposals

1. Type of Well  
 Oil Well     Gas Well     Other (specify)

2. Name of Operator  
Chuska Energy Company

3. Address of Operator  
3315 Bloomfield Highway, Farmington, NM 87401

4. Telephone Number  
505-326-5525

5. Location of Well  
Footage : 1650' FSL, 2030' FWL  
QQ, Sec, T., R., M.: NE/4 SW/4 S31 T41S R24E  
County: San Juan  
State: UTAH

**CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

<p><b>NOTICE OF INTENT</b> (Submit in Duplicate)</p> <p><input type="checkbox"/> Abandonment                      <input type="checkbox"/> New Construction</p> <p><input type="checkbox"/> Casing Repair                      <input type="checkbox"/> Pull or Alter Casing</p> <p><input type="checkbox"/> Change of Plans                      <input type="checkbox"/> Recompletion</p> <p><input type="checkbox"/> Conversion to Injection              <input type="checkbox"/> Shoot or Acidize</p> <p><input type="checkbox"/> Fracture Treat                      <input type="checkbox"/> Vent or Flare</p> <p><input type="checkbox"/> Multiple Completion              <input type="checkbox"/> Water Shut-Off</p> <p><input type="checkbox"/> Other _____</p> <p>Approximate Date Work Will Start _____</p>	<p><b>SUBSEQUENT REPORT</b> (Submit Original Form Only)</p> <p><input type="checkbox"/> Abandonment *                      <input type="checkbox"/> New Construction</p> <p><input type="checkbox"/> Casing Repair                      <input type="checkbox"/> Pull or Alter Casing</p> <p><input checked="" type="checkbox"/> Change of Plans                      <input type="checkbox"/> Recompletion</p> <p><input type="checkbox"/> Conversion to Injection              <input type="checkbox"/> Vent or Flare</p> <p><input type="checkbox"/> Fracture Treat                      <input type="checkbox"/> Water Shut-Off</p> <p><input type="checkbox"/> Other _____</p> <p>Date of Work Completion <u>4-12-91</u></p> <p>Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form. * Must be accompanied by a cement verification report.</p>
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13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

Name of well has been changed

**FROM:** Mule 31-K  
1650' FSL/2030' FWL  
S31 T41S R24E  
San Juan County, Utah

**TO:** Mule 31-K-1  
1650' FSL/2030' FWL  
S31 T41S R24E  
San Juan County, Utah

**RECEIVED**  
APR 17 1991  
DIVISION OF  
OIL GAS & MINING

14. I hereby certify that the foregoing is true and correct

Name & Signature Christopher S.W. Hill  Title Operations Engineer Date 12 Apr 91

(State Use Only)



# CHUSKA ENERGY COMPANY

1775 SHERMAN STREET - SUITE 1800 • DENVER, COLORADO 80203 • PHONE: (303) 863-7021  
FAX #: (303) 863-7210

May 17, 1991

Ms. Vicki Kearney  
Utah Oil & Gas Commission  
355 West North Temple  
Three Triad Center  
Suite 350  
Salt Lake City, Utah  
84180-1203

Dear Ms. Kearney:

Please keep all Chuska Energy Company data confidential until further notice.

Thanks,

A handwritten signature in cursive script that reads "Herb".

Herbert P. Mosca  
Chuska Staff Geologist

**RECEIVED**

MAY 20 1991

DIVISION OF  
OIL GAS & MINING

DIVISION OF OIL, GAS AND MINING

WATER PERMIT OK

API NO. 43-037-31617

SPUDDING INFORMATION

NAME OF COMPANY: CHUSKA ENERGY COMPANY

WELL NAME: MULE 31-K-1

SECTION NESW 31 TOWNSHIP 41S RANGE 24E COUNTY SAN JUAN

DRILLING CONTRACTOR AZTEC

RIG # 184

SPUDDED: DATE 10-13-91

TIME a.m.

HOW ROTARY

**CONFIDENTIAL**

DRILLING WILL COMMENCE \_\_\_\_\_

REPORTED BY GLENN GOODWIN

TELEPHONE # \_\_\_\_\_

DATE 10-17-91 SIGNED TAS/JLT

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

6. Lease Designation and Serial Number NOG 8702-1116
7. Indian Allottee or Tribe Name Navajo Tribal
8. Unit or Communitization Agreement

**SUNDRY NOTICES AND REPORTS ON WELLS**  
Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells.  
Use APPLICATION FOR PERMIT for such proposals

1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other (specify)	
2. Name of Operator Chuska Energy Company	
3. Address of Operator 3315 Bloomfield Hwy, Farmington, NM 87401	4. Telephone Number 505-326-5525
5. Location of Well 1650' FSL, 2030' FWL Surface Footage : 692' FSL, 2296' FWL Subsurface QQ, Sec, T., R., M. : NE/4 SE/4 S31 T41S R24E	

9. Well Name and Number Mule 31K-1(N)
10. API Well Number 43-037-31617
11. Field and Pool, or Wildcat Wildcat

**12. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

**NOTICE OF INTENT**  
(Submit in Duplicate)

<input type="checkbox"/> Abandonment	<input type="checkbox"/> New Construction
<input type="checkbox"/> Casing Repair	<input type="checkbox"/> Pull or Alter Casing
<input type="checkbox"/> Change of Plans	<input type="checkbox"/> Recompletion
<input type="checkbox"/> Conversion to Injection	<input type="checkbox"/> Shoot or Acidize
<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Vent or Flare
<input type="checkbox"/> Multiple Completion	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Other _____	

Approximate Date Work Will Start \_\_\_\_\_

**SUBSEQUENT REPORT**  
(Submit Original Form Only)

<input type="checkbox"/> Abandonment *	<input type="checkbox"/> New Construction
<input type="checkbox"/> Casing Repair	<input type="checkbox"/> Pull or Alter Casing
<input type="checkbox"/> Change of Plans	<input type="checkbox"/> Shoot or Acidize
<input type="checkbox"/> Conversion to Injection	<input type="checkbox"/> Vent or Flare
<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Water Shut-Off
<input checked="" type="checkbox"/> Other <u>Spud/ Surface Casing</u>	

Date of Work Completion 10-24-91

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form.  
\* Must be accompanied by a cement verification report.

**13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)**

MIRU Aztec Rig #184. Spudded 8:00 AM hrs, 10-13-91. Drill 12 1/4" hole to 529'. RU and run 12 joints (527') 8 5/8" 24# ST&C casing. Land at 520' KB. Cemented with 375 sxs Class 'G' cement + 2% CaCl<sub>2</sub> + 1/4# sx Celloflake. Circulate 23 bbls cement slurry to pit. Notification of spud by Larry Chambers, to BLM, Steve Mason, @ 3:00 PM, 10-01-91.

SEP 10 1993

14. I hereby certify that the foregoing is true and correct

Name & Signature Barry A. Wieland  Title Operations Manager Date 5-26-93  
(State Use Only)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals.

5. Lease Designation and Serial No.  
NOG 8702-1116

6. If Indian, Allottee or Tribe Name  
Navajo Tribal

7. If Unit or CA, Agreement Designation

8. Well Name and No.  
Mule 31K-1(n)

9. API Well No.  
43-037-31617

10. Field and Pool, or Exploratory Area

11. County or Parish, State  
Wildcat

San Juan, Utah

SUBMIT IN TRIPLICATE

1. Type of Well

Oil Well  Gas Well  Other

2. Name of Operator

Chuska Energy Company

3. Address and Telephone No.

3315 Bloomfield Hwy Farmington, N.M. 87401 (505)326-5525

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Location: 1650' PSL, 2030' FWL Sec. 31, T41S, R24E  
Sub Surface: 692' FSL, 2296' FWL

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

Notice of Intent  
 Subsequent Report  
 Final Abandonment Notice

TYPE OF ACTION

Abandonment  
 Recompletion  
 Plugging Back  
 Casing Repair  
 Altering Casing  
 Other Spud/ Surface csg

Change of Plans  
 New Construction  
 Non-Routine Fracturing  
 Water Shut-Off  
 Conversion to Injection  
 Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log forms.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

MIRU Aztec Rig #184. Spudded 08:00 AM hrs, 10-13-91. Drill 12 1/4" hole to 529'. RU and run 12 jts (527') 8 5/8" 24# ST&C casing. Land at 520' KB. Cemented with 375 sxs class 'G' cement + 2% CaCl2 + 1/4#/sx cellofalke. Circulate 23 bbls cement slurry to p. Notification of spud by Larry Chambers, to BLM, Steve Mason, @ 3:00 PM, 10-01-91.

CONFIDENTIAL

SEP 10 1993

RECEIVED  
BLM  
92 JUN -8 PM 3:02  
019 FARMINGTON, N.M.

14. I hereby certify that the foregoing is true and correct

Signed Larry A. Chambers

Title Production Engineer

Date 10/24/91

(This space for Federal or State office use)

Approved by \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_

Conditions of approval, if any:

JUN 12 1992

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
Budget Bureau No. 1004-  
Expires: March 31, 1991

RECEIVED  
BLM

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals -7 11 9:37

SUBMIT IN TRIPLICATE

SIS FARMINGTON, N.M.

1. Type of Well  
 Oil Well     Gas Well     Other

2. Name of Operator  
 Chuska Energy Company

3. Address and Telephone No.  
 3315 Bloomfield Hwy Farmington, NM 87401 (505)326-5525

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
 1650' FSL, 2030'FWL    Location  
 692' FSL, 2296'FWL    Subsurface    Section 31,T41S,R24E

5. Lease Designation and Serial  
 NOG 8702-1116

6. If Indian, Allottee or Tribe Name  
 Navajo Tribal

7. If Unit or CA, Agreement Designation  
 N/A

8. Well Name and No.  
 Mule 31K1(N)

9. API Well No.  
 43-037-31617

10. Field and Pool, or Exploration Name  
 Wildcat

11. County or Parish, State  
 San Juan, County

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back
	<input type="checkbox"/> Casing Repair
	<input type="checkbox"/> Altering Casing
	<input checked="" type="checkbox"/> Other <u>Production Casing</u>
	<input type="checkbox"/> Change of Plans
	<input type="checkbox"/> New Construction
	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Dispose Water

(Note: Report results of multiple completions, recompletions, or conversions to injection.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is direct, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

DRILLED TO 6162'. LOGGED & RAN 148 JTS 5 1/2, 15.50, K-55, LTC CSG, FLOAT SHOE, FLOAT COLLAR, DV TOOL, AND LANDED AT 6162'KB. DV TOOL @ 3520'. CEMENTED AS FOLLOWS:

STAGE #1: LEAD W/ 40 BBL MF + 375 SXS 65/35 POZ + 1/4#/SX FLOCELE + 6% GEL (12.7 PPG). TAIL-IN W/ 260 SX CLASS 'G' + 0.6% D-112 + 0.3% D-65 + 0.2% D-136 + 1/4#/SX FLOCELE (15.8 PPG). DISPLACE W/ WATER AND CIRCULATE 19 BBLs CEMENT TO SURFACE.

STAGE #2: LEAD W/ 20 BBLs MF + 961 SX 65/35 POZ + 1/4#//SX FLOCELE + 6% GEL (12.7 PPG). CIRCULATED CEMENT TO SURFACE AND TAIL-IN W/ 100 SX CLASS 'G' + 2% CaCl2 + 1/4#/SX FLOCELE (15.8 PPG). PLUG DOWN AT 2245 HRS, 11-6-91.

RELEASE RIG @ 0200 HRS, 11-7-91.

SEP 10 1991

14. I hereby certify that the foregoing is true and correct

Signed Gary A. Chambers Title Production Engineer Date 12-27-91

(This space for Federal or State office use)

Approved by \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_  
 Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

6. Lease Designation and Serial Number NOG 8702-1116
7. Indian Allottee or Tribe Name Navajo Tribal
8. Unit or Communitization Agreement
9. Well Name and Number Mule 31K1(N)
10. API Well Number 43-037-31617
11. Field and Pool, or Wildcat Wildcat

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells.  
Use APPLICATION FOR PERMIT— for such proposals

1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other (specify)	
2. Name of Operator Chuska Energy Company	
3. Address of Operator 3315 Bloomfield Hwy. Farmington, NM 87401	4. Telephone Number 505-326-5525
5. Location of Well 692' FSL, 2296' FWL Subsurface Footage : 1650' FSL, 2030' FWL Surface QQ, Sec, T., R., M. : NE/4 SE/4 S31 T41S R24E County : San Juan State : UTAH	

12. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENT  
(Submit in Duplicate)

<input type="checkbox"/> Abandonment <input type="checkbox"/> Casing Repair <input type="checkbox"/> Change of Plans <input type="checkbox"/> Conversion to Injection <input type="checkbox"/> Fracture Treat <input type="checkbox"/> Multiple Completion <input type="checkbox"/> Other _____	<input type="checkbox"/> New Construction <input type="checkbox"/> Pull or Alter Casing <input type="checkbox"/> Recompletion <input type="checkbox"/> Shoot or Acidize <input type="checkbox"/> Vent or Flare <input type="checkbox"/> Water Shut-Off
---	---

Approximate Date Work Will Start \_\_\_\_\_

SUBSEQUENT REPORT  
(Submit Original Form Only)

<input type="checkbox"/> Abandonment * <input type="checkbox"/> Casing Repair <input type="checkbox"/> Change of Plans <input type="checkbox"/> Conversion to Injection <input type="checkbox"/> Fracture Treat <input checked="" type="checkbox"/> Other <u>Production Casing</u>	<input type="checkbox"/> New Construction <input type="checkbox"/> Pull or Alter Casing <input type="checkbox"/> Shoot or Acidize <input type="checkbox"/> Vent or Flare <input type="checkbox"/> Water Shut-Off
---	--

Date of Work Completion \_\_\_\_\_

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form.  
\* Must be accompanied by a cement verification report.

13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

Drilled to 6162'. Logged & ran 148 joints 5 1/2, 15.5 K-55, LTC csg, float shoe, Float collar, DV Tool, and landed at 6162' KB. DV tool @ 3520'. Cemented as follows:

Stage #1: Lead with 40 bbl MF + 375 sxs 65/35 Poz + 1/4#/sx Flocele + 6% Gel (12.7 PPG). Tail in with 260 sxs Class 'G' = 0.6% D-112 + 0.3% D-65 + 0.2% D-136 + 1/4#/sx Flocele (15.8 PPG). Displace with water and circulate 19 bbls cement to surface.

Stage #2: Lead with 20 bbls MF + 961 sx 65/35 Poz + 1/4#/sx Flocele + 6% Gel (12.7 PPG). Circulated cement to surface and tail in with 100 sx Class 'G' + 2% CaCl<sub>2</sub> + 1/4#/sx Flocele (15.8 PPG). Plug down at 2245 hrs., 11-06-91.

Release Rig @ 0200 hrs, 11-07-91.

SEP 10 1993

14. I hereby certify that the foregoing is true and correct

Name & Signature <u>Barry A. Wieland</u>	Title <u>Operations Manager</u>	Date <u>5-26-93</u>
--	---------------------------------	---------------------

(State Use Only)

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

6. Lease Designation and Serial Number NOG 8702-1116
7. Indian Allottee or Tribe Name Navajo Tribal
8. Unit or Communitization Agreement

**SUNDRY NOTICES AND REPORTS ON WELLS**

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Use APPLICATION FOR PERMIT— for such proposals

1. Type of Well <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other (specify)
2. Name of Operator Chuska Energy Company
3. Address of Operator 3315 Bloomfield Hwy. Farmington, NM 87401
4. Telephone Number 505-326-5525
5. Location of Well 692' FSL, 2296' FWL Subsurface Footage : 1650' FSL, 2030' FWL Surface QQ, Sec. T., R., M. : NE/4 Se/4 T41S R24E
County : San Juan State : UTAH

9. Well Name and Number Mule 31-K <del>1</del> 1
10. API Well Number 43-037-31617
11. Field and Pool, or Wildcat Wildcat

**12. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

**NOTICE OF INTENT**  
(Submit in Duplicate)

<input type="checkbox"/> Abandonment	<input type="checkbox"/> New Construction
<input type="checkbox"/> Casing Repair	<input type="checkbox"/> Pull or Alter Casing
<input type="checkbox"/> Change of Plans	<input type="checkbox"/> Recompletion
<input type="checkbox"/> Conversion to Injection	<input type="checkbox"/> Shoot or Acidize
<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Vent or Flare
<input type="checkbox"/> Multiple Completion	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Other _____	

Approximate Date Work Will Start \_\_\_\_\_

**SUBSEQUENT REPORT**  
(Submit Original Form Only)

<input type="checkbox"/> Abandonment *	<input type="checkbox"/> New Construction
<input type="checkbox"/> Casing Repair	<input type="checkbox"/> Pull or Alter Casing
<input type="checkbox"/> Change of Plans	<input type="checkbox"/> Shoot or Acidize
<input type="checkbox"/> Conversion to Injection	<input type="checkbox"/> Vent or Flare
<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Water Shut-Off
<input checked="" type="checkbox"/> Other Plans _____	

Date of Work Completion 10-27-92

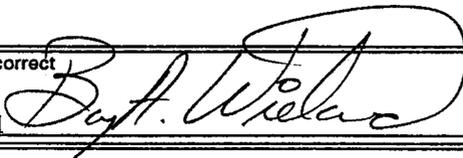
Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form.  
\* Must be accompanied by a cement verification report.

**13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)**

Chuska Energy Company has run two (2) down hole pressure tests on this well and is currently using it as an observation well to monitor the pressure depletion of the Mule 31M and the correlation of it to the Jack 31G. Based on the results Chuska would like to continue to use it as a pressure observation well for the next six (6) months, at which time we may choose to fracture stimulate the well and possibly produce it.

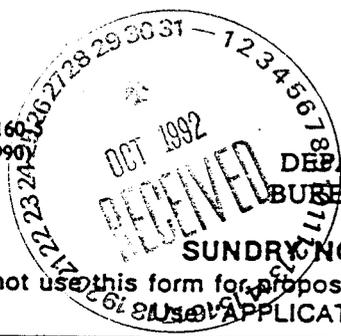
SEP 10 1992

14. I hereby certify that the foregoing is true and correct.

Name & Signature Barry A. Wieland  Title Operations Manager Date 5-26-93

(State Use Only)

Form 3160  
(June 1992)



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED  
BLM

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

5. Lease Designation and Serial No.  
NOG 8702-1116

6. If Indian, Allottee or Tribe Name  
NAVAJO

7. If Unit or CA, Agreement Designation

8. Well Name and No.  
Mule 31K 1

9. API Well No.  
43-037-31617

10. Field and Pool, or Exploratory Area  
Wildcat

11. County or Parish, State  
San Juan County, UT

SUBMIT IN TRIPLICATE

1. Type of Well  
 Oil Well  Gas Well  Other

2. Name of Operator  
Chuska Energy Company

3. Address and Telephone No.  
3315 Bloomfield Highway, Farmington, NM 87401 505-326-5525

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
1650' FSL & 2030' FWL (surface)  
692' FSL & 2296' FWL (subsurface)

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back
	<input type="checkbox"/> Casing Repair
	<input type="checkbox"/> Altering Casing
	<input checked="" type="checkbox"/> Other <u>Plans</u>
	<input type="checkbox"/> Change of Plans
	<input type="checkbox"/> New Construction
	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Dispose Water

(Note: Report results of multiple completion on Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Chuska Energy Company has run two (2) down hole pressure tests on this well and is currently using it as an observation well to monitor the pressure depletion of the Mule 31M and the correlation of it to the Jack 31G. Based on the results Chuska would like to continue to use it as a pressure observation well for the next six (6) months, at which time we may choose to fracture stimulate the well and possibly produce it.

SEP 10 1993

THIS APPROVAL EXPIRES MAY 01 1993

14. I hereby certify that the foregoing is true and correct  
Signed Gary A. [Signature] Title Operations Engineer Date 10/27/92

(This space for Federal or State office use)

Approved by \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_  
Conditions of approval, if any:

APPROVED

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

\*See Instruction on Reverse Side  
OPERATOR

AREA MANAGER

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

6. Lease Designation and Serial Number

NOG 8702-1116

7. Indian Allottee or Tribe Name

Navajo Tribal

8. Unit or Communitization Agreement

**SUNDRY NOTICES AND REPORTS ON WELLS**

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells.  
Use APPLICATION FOR PERMIT— for such proposals

1. Type of Well

- Oil Well       Gas Well       Other (specify)

9. Well Name and Number

Mule 31K-1(N)

2. Name of Operator

Chuska Energy Company

10. API Well Number

43-037-31617

3. Address of Operator

3315 Bloomfield Hwy. Farmington, NM 87401

4. Telephone Number

505-326-5525

11. Field and Pool, or Wildcat

Wildcat

5. Location of Well

Footage : 1650' FSL, 2030 FWL  
QQ. Sec. T., R., M. : NE/4 SE/4 S31 T41S R24E

County : San Juan  
State : UTAH

**12. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

**NOTICE OF INTENT**  
(Submit in Duplicate)

- |   |   |
|---|---|
| <input type="checkbox"/> Abandonment                | <input type="checkbox"/> New Construction     |
| <input type="checkbox"/> Casing Repair              | <input type="checkbox"/> Pull or Alter Casing |
| <input checked="" type="checkbox"/> Change of Plans | <input type="checkbox"/> Recompletion         |
| <input type="checkbox"/> Conversion to Injection    | <input type="checkbox"/> Shoot or Acidize     |
| <input type="checkbox"/> Fracture Treat             | <input type="checkbox"/> Vent or Flare        |
| <input type="checkbox"/> Multiple Completion        | <input type="checkbox"/> Water Shut-Off       |
| <input type="checkbox"/> Other _____                |   |

Approximate Date Work Will Start \_\_\_\_\_

**SUBSEQUENT REPORT**  
(Submit Original Form Only)

- |  |   |
|--|---|
| <input type="checkbox"/> Abandonment *           | <input type="checkbox"/> New Construction     |
| <input type="checkbox"/> Casing Repair           | <input type="checkbox"/> Pull or Alter Casing |
| <input type="checkbox"/> Change of Plans         | <input type="checkbox"/> Shoot or Acidize     |
| <input type="checkbox"/> Conversion to Injection | <input type="checkbox"/> Vent or Flare        |
| <input type="checkbox"/> Fracture Treat          | <input type="checkbox"/> Water Shut-Off       |
| <input type="checkbox"/> Other _____             |   |

Date of Work Completion \_\_\_\_\_

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form.

\* Must be accompanied by a cement verification report.

13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

Due to newly reviewed seismic analysis, Chuska proposes to drill the 31K-1 as a directional well. Please refer to attached revised details. The new bottomhole location is described as 2296' FWL and 692' FSL in Section 31-T41S-R24E, San Juan County, Utah.

SEP 10 1993

14. I hereby certify that the foregoing is true and correct

Name & Signature Barry A. Wieland



Title Operations Manager

Date 5-26-93

(State Use Only)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED  
BLM

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

OCT -7 1991

5. Lease Designation and Serial No.  
27 NOG-8702-1116

6. If Indian, Allottee or Tribe Name  
N.M.

Navajo Tribal

7. If Unit or CA, Agreement Designation

8. Well Name and No.  
Mule 31K-1

9. API Well No.  
43-037-31617

10. Field and Pool, or Exploratory Area  
Wildcat

11. County or Parish, State  
San Juan County, Utah

SUBMIT IN TRIPLICATE

1. Type of Well  
 Oil Well     Gas Well     Other

2. Name of Operator  
 Chuska Energy Company

3. Address and Telephone No.  
 3315 Bloomfield Highway, Farmington, New Mexico 87401 505-326-5525

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
 Section 31-T41S-R24E  
 1650' FSL, 2030' FWL - *Surface Location*

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment	<input checked="" type="checkbox"/> Change of Plans
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion	<input type="checkbox"/> New Construction
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Altering Casing	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Other	<input type="checkbox"/> Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

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20465

SEP 10 1993

CONFIDENTIAL

14. I hereby certify that the foregoing is true and correct

Signed *[Signature]*

Title SR. PETROLEUM ENGINEER

APPROVED AS AMENDED 10/3/91

(This space for Federal or State office use)

Approved by \_\_\_\_\_  
Conditions of approval, if any:

Title \_\_\_\_\_ Date OCT 08 1991  
*[Signature]*  
AREA MANAGER



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT--" for such proposals

FORM APPROVED

Budget Bureau No. 1004-9135  
Expires: March 31, 1993

5. Lease Designation and Serial No.

NOG 8702-1116

6. If Indian, Allottee or Tribe Name

Navajo Tribal

7. If Unit or CA, Agreement Designation

8. Well Name and No.

Mule 31-K

9. API Well No.

43-037-31617

10. Field and Pool, or Exploratory Area

Wildcat

11. County or Parish, State

San Juan, Utah

SUBMIT IN TRIPLICATE

1. Type of Well

Oil Well  Gas Well  Other

2. Name of Operator

Chuska Energy Company

3. Address and Telephone No.

3315 Bloomfield Highway, Farmington, NM 87401 505-326-5525

4. Location of Well (Footage, Sec., T., R., N., or Survey Description)

1650' FSL, 2030' FWL, S31, T41S, R24E

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- Notice of intent
- Subsequent Report
- Final Abandonment Notice

TYPE OF ACTION

- Abandonment
- Recompletion
- Plugging Back
- Casing Repair
- Altering Casing
- Other
- Change of Plans
- New Construction
- Non-Routine Fracturing
- Water Shut-off
- Conversion to Injection
- Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directional, drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Name of well has been changed.

**FROM:** Mule 31-K  
1650' FSL/2030' FWL  
S31 T41S R24E  
San Juan County, Utah

**TO:** Mule 31-K-1  
1650' FSL/2030' FWL  
S31 T41S R24E  
San Juan County, Utah

SEP 10 1993

14. I hereby certify that the foregoing is true and correct

Signed [Signature] Title Operations Engineer Date 12 Apr 91

(This space for Federal or State office use)

Approved by \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_  
Conditions of approval, if any

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

\*See Instructions On Reverse Side

<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>		7. Indian Allottee or Tribe Name Navajo Tribal
Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells. Use APPLICATION FOR PERMIT-- for such proposals		8. Unit or Communitization Agreement
1. Type of Well <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other (specify)	9. Well Name and Number Mule 31-K	
2. Name of Operator Chuska Energy Company	10. API Well Number 43-037-31617	
3. Address of Operator 3315 Bloomfield Highway, Farmington, NM 87401	4. Telephone Number 505-326-5525	11. Field and Pool, or Wildcat Wildcat
5. Location of Well Footage : 1650' FSL, 2030' FWL QQ, Sec. T., R., M.: NE/4 SW/4 S31 T41S R24E		County : San Juan State : UTAH

**12. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

NOTICE OF INTENT (Submit in Duplicate)	SUBSEQUENT REPORT (Submit Original Form Only)
<input type="checkbox"/> Abandonment <input type="checkbox"/> New Construction <input type="checkbox"/> Casing Repair <input type="checkbox"/> Pull or Alter Casing <input type="checkbox"/> Change of Plans <input type="checkbox"/> Recompletion <input type="checkbox"/> Conversion to Injection <input type="checkbox"/> Shoot or Acidize <input type="checkbox"/> Fracture Treat <input type="checkbox"/> Vent or Flare <input type="checkbox"/> Multiple Completion <input type="checkbox"/> Water Shut-Off <input type="checkbox"/> Other _____	<input type="checkbox"/> Abandonment * <input type="checkbox"/> New Construction <input type="checkbox"/> Casing Repair <input type="checkbox"/> Pull or Alter Casing <input checked="" type="checkbox"/> Change of Plans <input type="checkbox"/> Recompletion <input type="checkbox"/> Conversion to Injection <input type="checkbox"/> Vent or Flare <input type="checkbox"/> Fracture Treat <input type="checkbox"/> Water Shut-Off <input type="checkbox"/> Other _____
Approximate Date Work Will Start _____	Date of Work Completion <u>4-12-91</u>
	Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form. * Must be accompanied by a cement verification report.

13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

Name of well has been changed

**FROM:** Mule 31-K  
1650' FSL/2030' FWL  
S31 T41S R24E  
San Juan County, Utah

SEP 10 1993

**TO:** Mule 31-K-1  
1650' FSL/2030' FWL  
S31 T41S R24E  
San Juan County, Utah

14. I hereby certify that the foregoing is true and correct

Name & Signature Christopher S.W. Hill  Title Operations Engineer Date 12 Apr 91

(State Use Only)



# CHUSKA ENERGY COMPANY

3315 BLOOMFIELD HIGHWAY • FARMINGTON, NEW MEXICO 87401 • PHONE: (505) 326-5525

September 7, 1993

State of Utah  
Department of Natural Resources  
Division of Oil, Gas and Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

RECEIVED

SEP 10 1993

DIVISION OF  
OIL, GAS & MINING

Attn: Mr. R.J. Firth  
Associate Director

RE: Utah Division of Oil, Gas and Mining's  
Reporting Requirements

Dear Mr. Firth:

Enclosed please find the following reports and well logs run on wells drilled by Chuska Energy Company during the period January 1, 1992 forward. The Production Reports were filed in June under a separate cover letter by our home office, Harken Energy Company, out of Dallas. We have received conflicting statements as to whether or not the data was received. Therefore, a second set of Production reports from January 1992 forward are also forwarded to your office under this cover letter.

APD(S), SUNDRY NOTICES AND ENTITY ACTION FORMS

Barnes 18M  
Barnes 18M(N)  
Brown Hogan 1A-2  
Burro 33I  
Clay Hill 33-0  
Crane 35H  
Copperhead 15E  
D.C. Anticline 35K  
Heron 35H  
Heron 35H(A)  
Jack 31G  
Kokopelli 29I  
Lark 19B  
Lark 19B(G)  
Lighting Rock 2E  
Lizard 4M  
Lone Mountain Creek 12F-1

STATE OF UTAH  
DIVISION OF OIL, GAS AND MINING

3. LEASE DESIGNATION AND SERIAL NO.  
NOG 8702-1116

6. IF INDIAN, ALLOTTEE OR TRIBE NAME  
Navajo Tribal

7. UNIT AGREEMENT NAME  
N/A

8. FARM OR LEASE NAME  
Mule

9. WELL NO.  
31 K (N)

10. FIELD AND POOL OR WILDCAT  
Wildcat

11. SEC. T. R. M. OR BLOCK AND SURVEY OR AREA  
S31-T41S-R24E

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1. TYPE OF WELL: OIL WELL  GAS WELL  DRY  Other \_\_\_\_\_

2. TYPE OF COMPLETION: NEW WELL  WORK OVER  DEEP-EN  PLUG BACK  DIFF. RESTR.  Other \_\_\_\_\_

3. NAME OF OPERATOR  
Chuska Energy Company

4. ADDRESS OF OPERATOR  
3315 Bloomfield Hwy. Farmington, NM 87401 (505) 326-5525

5. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)  
At surface 1650' FSL, 2030' FWL  
At top prod. interval reported below  
At total depth 692' FSL, 2296' FWL

14. API NO. 43-037-31617 DATE ISSUED \_\_\_\_\_

12. COUNTY San Juan 13. STATE Utah

13. DATE SPUNDED 10-13-91 16. DATE T.D. REACHED 11-07-91 17. DATE COMPL. (Ready to prod.) 11-25-91 (Plug & Abn.) 18. ELEVATIONS (OP. SUR. AT, CR. ETC.) 4939' GR 4952' KB 19. ELEV. CASINGHEAD 4939' GR

20. TOTAL DEPTH, MD & TVD 6162' MD 21. PLUG BACK T.D., MD & TVD 6090' MD 22. IF MULTIPLE COMPL. HOW MANY 1 23. INTERVALS DRILLED BY \_\_\_\_\_ 24. TOTAL TOOLS YES 25. CABLE TOOLS NO

26. PRODUCING INTERVAL(S) OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)  
6003'-6029' Desert Creek  
*9-10-93 DIRECTIONAL SURVEY*  
*PERF LOG*  
*SMS RAW DATA - CYBERLOOK*

27. WAS DIRECTIONAL SURVEY MADE YES

28. TYPE ELECTRIC AND OTHER LOGS RUN  
CET/CCL/GR  
DIL/MSFL/GR/CAL/ CNL/FDC/LDT/GR/CAL BHT/CAL/GR

29. WAS WELL CORED YES  NO  (See remarks above) YES  
DRILL STEM TEST YES  NO  (See remarks above) YES

30. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB/FT	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT FILLED
8 5/8" K-55	23 #/FT	520' MD	12 1/4"	375 SX CL 'G' + 2% CaCl <sub>2</sub>	1 1/4# FLOCELE/sx
5 1/2" K-55	15.5 #/FT	6185' MD	7 7/8"	ST1 376 SX 65/35 Poz, 260 sx CL 'G'	
				ST2 961 SX 65/35 Poz, 100 SX CL 'G'	
DVT @ 3520'					

31. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	BACKS CEMENT	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)

32. ACID, SHOT, FRACTURE CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
6003-6008 MD	1300 Gal 28% MSR. 4800 Gal 28% Gelled MSR.
6010-6029 MD	

33. PRODUCTION

DATE FIRST PRODUCTION \* None to Date

PRODUCTION METHOD: Flowing, gas lift, pumping—size and type of pump  
Acid Job Failed to Stimulate. Needs Recompletion.

WELL STATUS (Producing or (ABN-IN) Shut in)

DATE OF TEST	HOURS TESTED	CHOKER SIZE	PROD. FOR TEST PERIOD	OIL—BBL	GAS—MCF	WATER—BBL	GAS-OIL RATIO

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

TEST WITNESSED BY

SEP 10 1993

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED *[Signature]* TITLE Operations Manager DATE 5-26-93

See Spaces for Additional Data on Reverse Side

INSTRUCTIONS

This form should be completed in compliance with the Utah Oil and Gas Conservation General Rules. If not filed prior to this time, all logs, tests, and directional surveys as required by Utah Rules should be attached and submitted with this report.

ITEM 18: Indicate which elevation is used as reference for depth measurements given in other spaces on this form and on any attachments.  
 ITEMS 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

ITEM 29: "Sacks Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

ITEM 33: Submit a separate completion report on this form for each interval to be separately produced (see instructions for items 22 and 24 above).

37. SUMMARY OF POROUS ZONES

Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut in pressures, and recoveries.

Formation	Top	Bottom	Description, contents, etc.	Name	Meas. Depth	Top	True Vert. Depth
CORE #1	5899'	5952'	Cut 53', Rec. 53', Lower Ismay To Desert Creek	Hermosa	4762'		4678'
CORE #2	5952'	6012'	Cut 60', REC. 32', Desert Creek	Upper Ismay	5720'		5594'
CORE #3	6012'	6054'	Cut 42', Rec. 42', Desert Creek	Hoven weep Shale	5841'		5620'
CORE #4	6057'	6117'	Cut 60', Rec. 60', Desert Creek	Lower Ismay	5854'		5633'
				Gothic Shale Chimney Rock Shale	5893'		5667'
				AKAH	6097'		5844'
					6111'		5856'

38.

GEOLOGIC MARKERS

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE

(See other instructions on reverse side)

FOR APPROVED  
OMB NO. 1004-0137  
Expires: December 31, 1991

5. LEASE DESIGNATION AND SERIAL NO.

NOG 8702 1116

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

NAVAJO TRIBAL

7. UNIT AGREEMENT NAME

N/A

8. FARM OR LEASE NAME, WELL NO.

MULE 31 K (N)

9. APIWELLNO.

10. FIELD AND POOL, OR WILDCAT

WILDCAT

11. SEC. T. R. M. OR BLOCK AND SURVEY OR AREA

S31-T41S-R24E

12. COUNTY OR PARISH

SAN JUAN

13. STATE

UTAH

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. TYPE OF WELL: OIL WELL  GAS WELL  DRY  Other \_\_\_\_\_

b. TYPE OF COMPLETION: NEW WELL  WORK OVER  DEEP-EN  PLUG BACK  DIFF. RESVR.  Other \_\_\_\_\_

2. NAME OF OPERATOR

CHUSKA ENERGY COMPANY

3. ADDRESS AND TELEPHONE NO.

(505) 326-5525

3315 BLOOMFIELD HIGHWAY, FARMINGTON, NEW MEXICO 87401

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)\*

At surface 1650' FSL, 2030' FWL

At top prod. interval reported below

At total depth 692' FSL, 2296' FWL

14. PERMIT NO. DATE ISSUED

43-037-31617

SEP 10 1993

15. DATE SPUDDED 10-13-91 16. DATE T.D. REACHED 11-7-91 17. DATE COMPL. (Ready to prod.) 11-25-91 18. ELEVATIONS (DF, RKB, RT, GR, ETC.)\* 4939' GR 4952' KB 19. ELEV. CASINGHEAD 4939' GR

20. TOTAL DEPTH, MD & TVD 6162' MD 21. PLUG, BACK T.D., MD & TVD 6090' MD 22. IF MULTIPLE COMPL., HOW MANY\* 1 23. INTERVALS DRILLED BY ROTARY TOOLS YES CABLE TOOLS NO

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)\* 6003'-6029' DESERT CREEK 25. WAS DIRECTIONAL SURVEY MADE YES

CONFIDENTIAL

26. TYPE ELECTRIC AND OTHER LOGS RUN DLL/MSFL/GR/CAL CNL/FDC/LDT/GR/CAL FMS/DIR BHC/CAL/GR CET/CCL/GR 27. WAS WELL CORRED YES

28. CASING RECORD (Report all strings set in well)

CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	TOP OF CEMENT, CEMENTING RECORD	AMOUNT PULLED
8 5/8" K-55	23 #/FT	520' MD	12 1/4"	375 SX CL "G" + 2% CaCl <sub>2</sub>	1/4# FLOCELE/SX
5 1/2" K-55	15.5 #/FT	6185' MD	7 7/8" ST	ST1: 376 SX 65/35 POZ, 260 SX CL "G"	
				ST2: 961 SX 65/35 POZ, 100 SX CL "G"	
DVT @ 3520'					

29. LINER RECORD 30. TUBING RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)

31. PERFORATION RECORD (Interval, size and number)  
6003'-6008', 5', .46" @ 4 SPF/20 SHOTS  
6010'-6029', 19', .46" @ 4 SPF/76 SHOTS

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
6003-6008 MD	1300 GAL 28% MSR, 4800 GAL 28% GELLED MSR.
6010-6029 MD	

33. PRODUCTION

DATE FIRST PRODUCTION \* NONE TO DATE PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) ACID JOB FAILED TO STIMULATE. NEEDS RECOMPLETION. WELL STATUS (Producing or shut-in) SHUT-IN

DATE OF TEST HOURS TESTED CHOKER SIZE PROD'N. FOR TEST PERIOD OIL—BBL. GAS—MCF. WATER—BBL. GAS-OIL RATIO

FLOW. TUBING PRESS. CASING PRESSURE CALCULATED 24-HOUR RATE OIL—BBL. GAS—MCF. WATER—BBL. OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) TEST WITNESSED BY

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

SIGNED [Signature] TITLE OPERATIONS MANAGER DATE 5-15-92

ACCEPTED FOR RECORD

\*(See Instructions and Spaces for Additional Data on Reverse Side)

JUN 12 1992

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

OPERATOR

BY [Signature]

FARMINGTON RESOURCE AREA

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries):

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
CORE #1	5899'	5952'	CUT 53', REC. 53', LOWER ISMAY TO DESERT CREEK
CORE #2	5952'	6012'	CUT 60', REC. 32', DESERT CREEK
CORE #3	6012'	6054'	CUT 42', REC. 42', DESERT CREEK
CORE #4	6057'	6117'	CUT 60', REC. 60', DESERT CREEK

PROBATIONARY  
SEP 10 1993

38. GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH
HERMOSA	4762'	4678'
UPPER ISMAY	5720'	5594'
HOVEN WEEP SHALE	5841'	5620'
LOWER ISMAY	5854'	5633'
GOTHIC SHALE	5893'	5667'
DESERT CREEK	5915'	5686'
CHIMNEY ROCK SHALE	6097'	5844'
AKAH	6111'	5856'

PETROLEUM INFORMATION ROCKY MOUNTAIN REGION REPORT  
SECTION IV - 12/31/91

UTAH DRILLING PROGRESS  
SAN JUAN COUNTY CONTINUED

GIANT EXPL & PROD  
16-12 GOTHIC MESA  
API 43-037-31599

16-41S-23E  
SW NW NW  
1135 FNL 0 FWL  
IC 430377000291

GOTHIC MESA; 5645, (FR 01/04/91FM) OPER ADD: BOX 2810, FARMINGTON, NM, 87499 PHONE (505) 326-3325; EL: 4601 GR; LOCATION DATA: 8 1/2 MI SE BLUFF, UT; TO BE DIRECTIONALLY DRILLED. PSHL: 2100 FNL 400 FWL SW SW NW 16-41S-23E; AMMANN BASE MAP UT-9, POMCO MAP U-83.

D

LOC;

GIANT EXPL & PROD  
17-41 GOTHIC MESA  
API 43-037-31598

17-41S-23E  
SE NE NE  
1100 FNL 0 FEL  
IC 430377000391

GOTHIC MESA; 5645, (FR 01/04/91FM) OPER ADD: BOX 2810, FARMINGTON, NM, 87499 PHONE (505) 326-3325; EL: 4601 GR; LOCATION DATA: 8 1/2 MI SE BLUFF, UT; TO BE DIRECTIONALLY DRILLED. PSHL: 1150 FNL 700 FEL SW NE NE 17-41S-23E; AMMANN BASE MAP UT-9, POMCO MAP U-83.

D

LOC;

CHUSKA ENERGY  
1 STERLING 36L  
API 43-037-31595

36-41S-23E  
SW NW SW  
1390 FSL 250 FWL  
IC 430377012190

DESERT CREEK; 5503 DESERT CREEK, (FR 12/17/90DN) OPER ADD: BOX 780, FARMINGTON, NM, 87499 PHONE (505) 326-5525; EL: 5003 GR; LOCATION DATA: 13 MI SE BLUFF, UT; AMMANN BASE MAP UT-9, POMCO MAP U-83.

D

CONTR: AZTEC WELL SRVCG, RIG # 184; SPUD: 04/19/91, CSG: 8 5/8 @ 525 W/371 SX, RAN PROD CSG; 5500 TD, (TD REACHED: 05/03/91); ... 5500 TD (APPROX), TITE HOLE (LDIR 12/30/91)

PHILLIPS PET  
20-66 RATHERFORD UNIT  
API 43-037-31592

20-41S-24E  
NE SW NW  
1369 FNL 1221 FWL  
IC 430377010590

ANETH GREATER; 5750 DESERT CREEK, (FR 12/03/90DN) OPER ADD: 152 N DURBIN 2ND FLOOR, CASPER, WY, 82601 PHONE (307) 237-3791; EL: 5762 GR; LOCATION DATA: 14 MI SE BLUFF, UT; AMMANN BASE MAP UT-9, POMCO MAP U-84, WELL ID CHANGES: ELEV CHGD FROM 4785 GR.

DO  
OIL

CONTR: EXETER DRLG, RIG # 68; SPUD: 03/17/91, CSG: 9 5/8 @ 1670 W/625 SX, 7 @ 5766 W/1200 SX; TBG: 2 7/8 @ 5623; LOG TYPES: BHCS, RFT; CNL 4762-5762, DISF 1668-5759, LDT 4762-5762; LOG TOPS: SHINARUMP 2375, DE CHELLY 2643, HERMOSA 4565, ISMAY 5403, GOTHIC 5541, DESERT CREEK 5553, 5766 TD, (DESERT CREEK) (TD REACHED: 03/29/91) BHT: 130F; PRODUCING INTERVAL(S) DATA: PERF (DESERT CREEK), 5549-5565, 5584-5623, ACID (5549-5623), 5772 TD, COMP 4/23/91, IPP 84 BOPD, 81 MCFGPD, 3 BWPD, GOR 964, PROD ZONE - DESERT CREEK 5549-5623, HOLDING FOR DATA ... (LDIR 12/20/91)

CHUSKA ENERGY  
31-K-1 MULE  
IC 43-037-70021-91  
-31617

31-41S-24E  
SE NE SW  
1650 FSL 2030 FWL

WILDCAT; 5877, (FR 04/01/91DN) OPER ADD: 3315 BLOOMFIELD HIGHWAY, FARMINGTON, NM, 87401 PHONE (505) 326-5525; EL: 4939 GR; LOCATION DATA: 1 MI W OF ANETH GREATER FLD (DESERT CREEK/PARADOX/ISMAY) 14 MI SE BLUFF, UT; AMMANN BASE MAP UT-9, WELL ID CHANGES: WELL NUMBER CHGD FROM 31K.

WF

CONTR: AZTEC WELL SRVCG, RIG # 184; SPUD: 10/13/91 (EST), CSG: RAN SURF & PROD CSG; 6161 TD, (TD REACHED: 11/05/91); PROD TEST(S): PERF (DESERT CREEK) 6003-6029, S 24D BOPD, ... 6161 TD, SI, WOPU (LDIR 12/30/91)

CHUSKA ENERGY  
31N MULE  
IC 43-037-70022-91

31-41S-24E  
NE SE SW  
740 FSL 2585 FWL

WILDCAT; 5959, (FR 04/01/91DN) OPER ADD: 3315 BLOOMFIELD HIGHWAY, FARMINGTON, NM, 87401 PHONE (505) 326-5525; EL: 4943 GR; LOCATION DATA: 1 MI W OF ANETH GREATER FLD (PARADOX/DESERT CREEK/ISMAY) 14 MI SE BLUFF, UT; AMMANN BASE MAP UT-9.

WF

LOC;

CHUSKA ENERGY  
1 OAK 11G  
API 43-037-31548

11-41S-25E  
SE SW NE  
2260 FNL 1520 FEL  
IC 430377007390

WILDCAT; 5701 DESERT CREEK, (FR 08/06/90DN) OPER ADD: BOX 780, FARMINGTON, NM, 87499 PHONE (505) 326-5525; EL: 4551 GR; LOCATION DATA: 1 MI SW ANETH GREATER FLD (PARADOX) 22 1/2 MI E-SE BLUFF, UT; AMMANN BASE MAP UT-9, POMCO MAP U-84, PERMIT REISSUED: 07/23/91

WF

LOC;

GIANT EXPL & PROD  
22-14 SE MCELMO  
API 43-037-31646

22-41S-25E  
NE SW SW  
832 FSL 746 FWL  
IC 430377004891

ANETH GREATER; 5595 DESERT CREEK, (FR 07/26/91FM) OPER ADD: BOX 2810, FARMINGTON, NM, 87499 PHONE (505) 326-3325; EL: 4582 GR; LOCATION DATA: 1 1/2 MI SE ANETH, UT; AMMANN BASE MAP UT-9.

D

LOC;

GIANT EXPL & PROD  
27-33 SE MCELMO  
API 43-037-31645

27-41S-25E  
SW NE SW  
1800 FSL 1800 FWL  
IC 430377004791

ANETH GREATER; 5535 DESERT CREEK, (FR 07/26/91FM) OPER ADD: BOX 2810, FARMINGTON, NM, 87499 PHONE (505) 326-3325; EL: 4582 GR; LOCATION DATA: 2 MI SE ANETH, UT; AMMANN BASE MAP UT-9.

D

LOC;

CHUSKA ENERGY  
33-O CLAY HILL  
IC 43-037-70046-91

33-41S-25E  
SE SW SE  
370 FSL 1750 FEL

WILDCAT; 5496, (FR 07/24/91DN) OPER ADD: 3315 BLOOMFIELD HWY, FARMINGTON, NM, 87401 PHONE (505) 326-5525; EL: 4533 GR; LOCATION DATA: 1 MI SW CLAY HILL FLD (DESERT CREEK) 3 MI S ANETH, UT; AMMANN BASE MAP UT-9.

WF

CONTR: AZTEC WELL SRVCG, RIG # 184; SPUD: 11/09/91, CSG: RAN SURF CSG; LOG TYPES: CWL; 5684 TD, (TD REACHED: 11/19/91); ... 5684 TD (TITE HOLE) (LDIR 12/10/91)

CHUSKA ENERGY  
35-H CRANE  
API 43-037-31626

35-41S-25E  
SW SE NE  
2635 FNL 1150 FEL  
IC 430377003291

WILDCAT; 5714, (FR 06/05/91DN) OPER ADD: 3315 BLOOMFIELD HWY, FARMINGTON, NM, 87401 PHONE (505) 326-5525; EL: 4651 GR; LOCATION DATA: 1 1/2 MI E CLAY HILL FLD (DESERT CREEK) 3 3/4 MI E-SE ANETH, UT; AMMANN BASE MAP UT-9.

WF

CONTR: AZTEC WELL SRVCG, RIG # 222; SPUD: 11/04/91, CSG: RAN SURF CSG; LOG TYPES: BHCS, CNL, DLL, LDT, MSFL; CORE # 1 NO DESCRIPTION AVAILABLE; 5714 TD, (TD REACHED: 11/30/91); ... 5714 TD (TITE HOLE) (LDIR 12/10/91)

## MONTHLY OIL AND GAS PRODUCTION REPORT

OPERATOR NAME AND ADDRESS:

LARRY G SESSIONS  
 CHUSKA ENERGY COMPANY  
 3315 BLOOMFIELD HWY  
 FARMINGTON NM 87401

UTAH ACCOUNT NUMBER: N9290

REPORT PERIOD (MONTH/YEAR): 12 / 93

AMENDED REPORT  (Highlight Changes)

Well Name			Producing Zone	Well Status	Days Oper	Production Volumes		
API Number	Entity	Location				OIL(BBL)	GAS(MCF)	WATER(BBL)
RUNWAY 10-E #2								
✓4303731550	11128	40S 25E 10	DSCR					
MONUMENT 17E #2								
✓4303731547	11139	40S 25E 17	DSCR					
NAVAJO CANYON 331 #1								
✓4303731546	11145	39S 25E 33	IS-DC					
LONE MOUNTAIN CREEK 12F #1								
✓4303731545	11148	42S 24E 12	DSCR					
RUNWAY 10C-5A								
✓4303731597	11152	40S 25E 10	DSCR					
BLUE HOGAN 1J #1								
✓4303731562	11161	42S 23E 1	DSCR					
ASAZI 5L #3								
✓4303731572	11207	42S 24E 5	PRDX					
NW CAJON 11 #1								
✓4303731510	11210	40S 24E 1	DSCR					
BROWN HOGAN 1A #2								
✓4303731573	11215	42S 23E 2	PRDX					
STERLING 36L #1								
✓4303731595	11224	41S 23E 36	PRDX					
MULE 31-K-1								
✓4303731617	11326	41S 24E 31	DSCR					
NORTH HERON 35C								
✓4303731616	11479	41S 25E 35	DSCR					
BURRO 311								
✓4303731708	11496	41S 24E 31	DSCR	No Card/K/DTS NO FILE		✓ done / 12/93		
<b>TOTALS</b>								

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

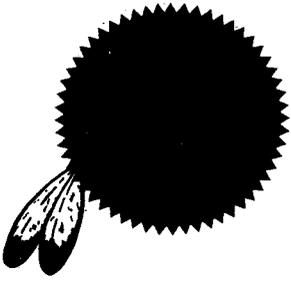
\_\_\_\_\_

I hereby certify that this report is true and complete to the best of my knowledge.

Date: \_\_\_\_\_

Name and Signature: \_\_\_\_\_

Telephone Number: \_\_\_\_\_



# HARKEN SOUTHWEST CORPORATION

(formerly Chuska Energy Company)

We are pleased to announce that effective January 18, 1994, Chuska Energy Company, has changed its name to Harken Southwest Corporation. This is in line with the February 1993 merger with Harken Exploration Company.

Harken Southwest Corporation is still located at 3315 Bloomfield Highway, Farmington, New Mexico, 87401. You may still contact us at (505) 326-5525.

Please reflect this name change as necessary on all future correspondence.

Thank you for your assistance in this matter and we look forward to working with you as Harken Southwest Corporation.

Sincerely,

Barry A. Wieland  
Operations Manager

RECEIVED

FEB 07 1994

DIVISION OF  
OIL, GAS & MINING

Division of Oil, Gas and Mining  
**PHONE CONVERSATION DOCUMENTATION FORM**

Route original/copy to:

Well File \_\_\_\_\_  
(Location) Sec \_\_\_ Twp \_\_\_ Rng \_\_\_  
(API No.) \_\_\_\_\_

Suspense  
(Return Date) \_\_\_\_\_  
(To - Initials) \_\_\_\_\_

Other  
*Oper. Nm. Change*

1. Date of Phone Call: 2-9-94 Time: 12:29

2. DOGM Employee (name) Y. Cordova (Initiated Call   
Talked to:

Name Wayne Townsend (Initiated Call  - Phone No. (505) 599-8900  
*(or Ken Townsend)*  
of (Company/Organization) Btm / Farmington N.M.

3. Topic of Conversation: Chuska Energy Co. to Harken Southwest Corp.

4. Highlights of Conversation:

They have not rec'd doc. of name change. When they do receive doc. they will most likely keep "Chuska" as operator yet mail any correspondence % Harken, until BIA approval. (BIA approval may take a while!)

\* 940210 Per Admin. OK to change.

Division of Oil, Gas and Mining  
**OPERATOR CHANGE WORKSHEET**

Routing:

1- <del>ABC</del> 7-SJV
2-DTS 8-FILE
3-VLC
4-RJF
5- <del>LEO</del>
6-PL

Attach all documentation received by the division regarding this change.  
 Initial each listed item when completed. Write N/A if item is not applicable.

- Change of Operator (well sold)                       Designation of Agent  
 Designation of Operator                               Operator Name Change Only

The operator of the well(s) listed below has changed (EFFECTIVE DATE: 1-18-94)

TO (new operator) HARKEN SOUTHWEST CORPORATION FROM (former operator) CHUSKA ENERGY COMPANY  
 (address) 3315 BLOOMFIELD HWY (address) 3315 BLOOMFIELD HWY  
FARMINGTON NM 87401 FARMINGTON NM 87401  
 phone ( 505 ) 326-5525 phone ( 505 ) 326-5525  
 account no. N 9290 account no. N9290

Well(s) (attach additional page if needed):

Name: <u>**SEE ATTACHED**</u>	API: <u>037-31617</u>	Entity: _____	Sec _____	Twp _____	Rng _____	Lease Type: _____
Name: _____	API: _____	Entity: _____	Sec _____	Twp _____	Rng _____	Lease Type: _____
Name: _____	API: _____	Entity: _____	Sec _____	Twp _____	Rng _____	Lease Type: _____
Name: _____	API: _____	Entity: _____	Sec _____	Twp _____	Rng _____	Lease Type: _____
Name: _____	API: _____	Entity: _____	Sec _____	Twp _____	Rng _____	Lease Type: _____
Name: _____	API: _____	Entity: _____	Sec _____	Twp _____	Rng _____	Lease Type: _____
Name: _____	API: _____	Entity: _____	Sec _____	Twp _____	Rng _____	Lease Type: _____

**OPERATOR CHANGE DOCUMENTATION**

- See 1. (Rule R615-8-10) Sundry or other legal documentation has been received from former operator (Attach to this form). *(Rec'd 2-7-94)*
- N/A 2. (Rule R615-8-10) Sundry or other legal documentation has been received from new operator (Attach to this form).
- See 3. The Department of Commerce has been contacted if the new operator above is not currently operating any wells in Utah. Is company registered with the state? (yes)/no \_\_\_\_\_ If yes, show company file number: #096704.
- See 4. (For Indian and Federal Wells ONLY) The BLM has been contacted regarding this change (attach Telephone Documentation Form to this report). Make note of BLM status in comments section of this form. Management review of **Federal and Indian** well operator changes should take place prior to completion of steps 5 through 9 below.
- See 5. Changes have been entered in the Oil and Gas Information System (Wang/IBM) for each well listed above. *(2-10-94)*
- See 6. Cardex file has been updated for each well listed above. *(2-10-94)*
- See 7. Well file labels have been updated for each well listed above. *(2-10-94)*
- See 8. Changes have been included on the monthly "Operator, Address, and Account Changes" memo for distribution to State Lands and the Tax Commission.
- See 9. A folder has been set up for the Operator Change file, and a copy of this page has been placed there for reference during routing and processing of the original documents.

**ENTITY REVIEW**

- Lee 1. (Rule R615-8-7) Entity assignments have been reviewed for all wells listed above. Were entity changes made? (yes/no) no (If entity assignments were changed, attach copies of Form 6, Entity Action Form).
- N/A 2. State Lands and the Tax Commission have been notified through normal procedures of entity changes.

**BOND VERIFICATION (Fee wells only)**

- N/A Lee 1. (Rule R615-3-1) The new operator of any fee lease well listed above has furnished a proper bond.
2. A copy of this form has been placed in the new and former operators' bond files.
3. The former operator has requested a release of liability from their bond (yes/no)    . Today's date     19   . If yes, division response was made by letter dated     19   .

**LEASE INTEREST OWNER NOTIFICATION RESPONSIBILITY**

- N/A 1. (Rule R615-2-10) The former operator/lessee of any fee lease well listed above has been notified by letter dated     19   , of their responsibility to notify any person with an interest in such lease of the change of operator. Documentation of such notification has been requested.
- N/A 2. Copies of documents have been sent to State Lands for changes involving State leases.

**FILMING**

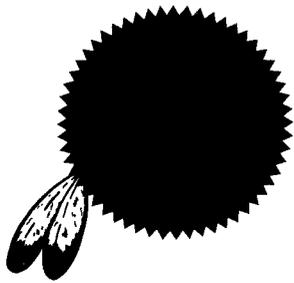
- ✓ 1. All attachments to this form have been microfilmed. Date: March 7 1994.

**FILING**

- Lee 1. Copies of all attachments to this form have been filed in each well file.
- Lee 2. The original of this form and the original attachments have been filed in the Operator Change file.

**COMMENTS**

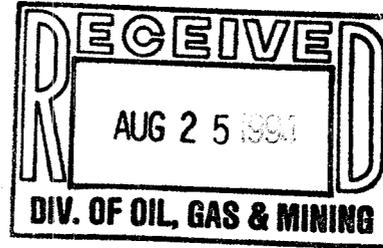
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# HARKEN SOUTHWEST CORPORATION

(formerly Chuska Energy Company)

August 16, 1994



State of Utah  
Department of Natural Resources  
Division of Oil, Gas and Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, UT 84180-1203

ATTENTION: Ms. Vicky Carney  
Production Group Supervisor

RE: Mule 31K - 1 (43-037-31617)  
San Juan County, UT

Gentlemen:

Enclosed please find a copy of the TVD-Compensated Neutron/Litho Density log and the Cement Evaluation Log.

If you should need additional information, please feel free to contact the undersigned.

Very truly yours,

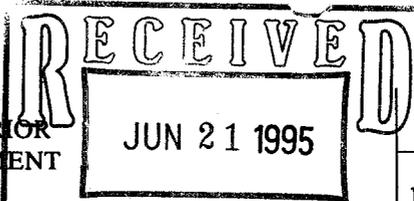
HARKEN SOUTHWEST CORPORATION

Ms. Rachelle Montgomery

/rlm

Enclosures (2)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT



FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

**SUNDRY NOTICES AND REPORTS** **DIVISION OF OIL, GAS & MINING**

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir  
Use "APPLICATION FOR PERMIT—" for such proposals

1. Lease Designation and Serial No.  
NOG 8707-1231

2. If Indian, Allottee or Tribe Name  
NAVAJO

7. If Unit or CA, Agreement Designation

8. Well Name and No.  
MULE 31K (N)

9. API Well No.  
43-037-31617

10. Field and Pool, or Exploratory Area

11. County or Parish, State  
SAN JUAN CO., UTAH

**SUBMIT IN TRIPLICATE**

1. Type of Well  
 Oil Well     Gas Well     Other

2. Name of Operator  
HARKEN SOUTHWEST CORPORATION

3. Address and Telephone No.  
P. O. BOX 612007, DALLAS, TX 75261-2007      214/753-6900

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
NE/SW SEC 31-41S-24E  
1650' FSL & 2030' FWL

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back
	<input type="checkbox"/> Casing Repair
	<input type="checkbox"/> Altering Casing
	<input type="checkbox"/> Other _____
	<input type="checkbox"/> Change of Plans
	<input type="checkbox"/> New Construction
	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Harken Southwest (HSW) does not anticipate being able to place the well in a producing status based on previous experience with similar well characteristics in other wellbores. The subject wellbore is currently being utilized as a reservoir monitoring well.

HSW is currently working with the Utah Geological Survey on a DOE Class II project. Technical staff believes this pressure data will greatly enhance work data on the DOE project currently underway.

In addition to monitoring, HSW may later choose to plug back & directionally drill the wellbore to a better productive reservoir location.

CC: State of Utah  
Navajo Nation - Minerals  
BIA - Gallup, NM

14. I hereby certify that the foregoing is true and correct

Signed *Rachelle Boulanger* Title PRODUCTION ADMINISTRATOR Date 6/08/95

(This space for Federal or State office use)

Approved by \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_  
Conditions of approval, if any:

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

**CONFIDENTIAL**

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

SEP 18 1995

**SUNDRY NOTICES AND REPORTS ON WELLS**

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

5. Lease Designation and Serial No.

NOG-8707-1231

6. If Indian, Allottee or Tribe Name

Navajo Nation

7. If Unit or CA, Agreement Designation

N/A

8. Well Name and No.

Mule 31K (N)

9. API Well No.

43-037-31617

10. Field and Pool, or Exploratory Area

11. County or Parish, State

San Juan Co., Utah

**SUBMIT IN TRIPLICATE**

1. Type of Well

Oil Well  Gas Well  Other

2. Name of Operator

Harken Southwest Corporation

3. Address and Telephone No.

P.O. Box 612007 Dallas, Texas 75261 (214) 753-6900

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

692' FSL & 2296' FWL (NE/SW)  
Section 31-41S-24E

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

TYPE OF ACTION

- Notice of Intent
- Subsequent Report
- Final Abandonment Notice

- Abandonment
- Recompletion
- Plugging Back
- Casing Repair
- Altering Casing
- Other Information

- Change of Plans
- New Construction
- Non-Routine Fracturing
- Water Shut-Off
- Conversion to Injection
- Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Please be advised the subject wellbore is being utilized for the DOE (Class II) enhanced recovery study. Harken Southwest performed at bottom hole pressure measurement on September 8, 1995. The data is attached on the attached graph.

**\*\*\* PLEASE CONSIDER THE SUBMITTAL CONFIDENTIAL \*\*\***

CC: State of Utah  
Navajo Nation (Minerals Dept)

**Accepted by the  
Utah Division of  
Oil, Gas and Mining**

**FOR RECORD ONLY**

14. I hereby certify that the foregoing is true and correct

Signed

*Rachelle Montgomery*

Title

Production Administrator

Date

9-15-95

(This space for Federal or State office use)

Approved by

Title

Date

Conditions of approval, if any:

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	RECTANGULAR COORDINATES		Dogleg Deg/100Ft	Vert Sect
0.00	0.00	0.00	0.00	0.00 N	0.00 E	0.00	0.00
725.00	0.60	271.30	724.99	0.09 N	3.80 W	0.08	-1.16 MWD
2305.00	2.50	276.00	2304.34	3.88 N	46.34 W	0.12	-16.92 Single Shot
3060.00	1.00	191.00	3059.05	0.87 S	63.98 W	0.34	-17.39 Single Shot
3109.00	1.20	193.90	3108.04	1.79 S	64.18 W	0.42	-16.57 MWD to Bottom
3139.00	2.10	189.00	3138.03	2.64 S	64.34 W	3.03	-15.80
3170.00	2.70	189.00	3169.00	3.92 S	64.54 W	1.94	-14.63
3201.00	3.10	182.70	3199.96	5.48 S	64.70 W	1.65	-13.18
3232.00	3.10	178.50	3230.92	7.15 S	64.72 W	0.73	-11.58
3262.00	3.30	174.90	3260.87	8.82 S	64.62 W	0.94	-9.95
3293.00	3.30	166.50	3291.82	10.58 S	64.33 W	1.56	-8.18
3324.00	3.70	164.40	3322.76	12.41 S	63.85 W	1.35	-6.29
3354.00	4.30	163.70	3352.69	14.42 S	63.28 W	2.01	-4.20
3385.00	5.10	163.00	3383.58	16.86 S	62.55 W	2.59	-1.66
3415.00	5.70	161.60	3413.45	19.54 S	61.69 W	2.05	1.16
3448.00	5.70	157.40	3446.29	22.61 S	60.54 W	1.26	4.43
3479.00	5.50	159.50	3477.14	25.42 S	59.43 W	0.92	7.44
3510.00	5.90	164.40	3507.98	28.35 S	58.48 W	2.03	10.52
3541.00	5.70	166.50	3538.83	31.38 S	57.69 W	0.94	13.65
3571.00	5.90	159.50	3568.67	34.28 S	56.80 W	2.45	16.67
3600.00	6.80	156.70	3597.50	37.25 S	55.60 W	3.28	19.87
3631.00	8.40	158.80	3628.22	41.04 S	54.06 W	5.24	23.95
3662.00	9.60	158.80	3658.84	45.57 S	52.31 W	3.87	28.78
3694.00	9.60	158.10	3690.39	50.53 S	50.34 W	0.36	34.10
3723.00	9.20	158.80	3719.00	54.94 S	48.60 W	1.43	38.81
3754.00	10.50	158.80	3749.54	59.88 S	46.69 W	4.19	44.10
3785.00	12.90	160.20	3779.90	65.77 S	44.49 W	7.80	50.37
3816.00	14.30	162.30	3810.03	72.67 S	42.16 W	4.79	57.65
3847.00	14.50	162.30	3840.05	80.02 S	39.81 W	0.64	65.36
3878.00	15.60	163.70	3869.99	87.72 S	37.46 W	3.74	73.41
3910.00	16.20	162.30	3900.77	96.10 S	34.90 W	2.22	82.18
3941.00	16.00	159.50	3930.55	104.22 S	32.09 W	2.59	90.76
3973.00	16.40	158.80	3961.28	112.56 S	28.91 W	1.39	99.66
4003.00	17.00	158.80	3990.02	120.60 S	25.79 W	2.00	108.26
4066.00	18.20	157.40	4050.06	138.27 S	18.68 W	2.02	127.22
4097.00	18.60	156.70	4079.48	147.28 S	14.86 W	1.47	136.94
4128.00	19.10	157.40	4108.82	156.50 S	10.96 W	1.77	146.90
4159.00	20.50	160.20	4137.98	166.29 S	7.17 W	5.45	157.36
4190.00	22.10	163.70	4166.87	177.00 S	3.70 W	6.59	168.61
4221.00	23.20	162.30	4195.48	188.41 S	0.20 W	3.95	180.55
4252.00	23.80	163.00	4223.90	200.21 S	3.48 E	2.13	192.91
4283.00	24.20	163.70	4252.22	212.29 S	7.09 E	1.58	205.52
4315.00	24.60	163.70	4281.37	224.98 S	10.80 E	1.25	218.74
4347.00	25.00	161.60	4310.42	237.79 S	14.81 E	3.02	232.16
4377.00	25.80	160.90	4337.52	249.97 S	18.94 E	2.85	245.01
4408.00	26.00	160.20	4365.40	262.74 S	23.45 E	1.18	258.54
4438.00	26.60	160.20	4392.30	275.25 S	27.96 E	2.00	271.81
4500.00	27.50	160.90	4447.51	301.84 S	37.34 E	1.54	299.97
4532.00	27.50	159.50	4475.90	315.74 S	42.35 E	2.02	314.72
4595.00	29.10	162.30	4531.37	343.96 S	52.10 E	3.30	344.55
4658.00	28.70	162.30	4586.52	372.96 S	61.36 E	0.63	374.99
4749.00	29.10	163.70	4666.19	415.02 S	74.21 E	0.86	418.96
4810.00	28.30	158.10	4719.71	442.68 S	83.77 E	4.60	448.20

All data is in feet unless otherwise stated  
Coordinates are from slot #1 and TVDs are from wellhead.  
Vertical section is from wellhead on azimuth 163.45 degrees.  
Calculation uses the minimum curvature method.

CHUSKA ENERGY COMPANY  
MULE 31K-1, slot #1  
SEC.-31T41S-R24E, SAN JUAN COUNTY, UTAH

SURVEY LISTING Page 2  
Your ref : Mule #31K-1  
Last revised : 28-Oct-91

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100Ft	Vert Sect
4840.00	28.30	158.80	4746.12	455.90 S	88.99 E	1.11	462.37
4933.00	26.30	158.80	4828.76	495.67 S	104.42 E	2.15	504.88
5026.00	27.00	157.40	4911.88	534.37 S	119.98 E	1.01	546.41
5119.00	27.30	158.80	4994.63	573.74 S	135.81 E	0.76	588.66
5214.00	28.30	163.70	5078.68	615.68 S	150.01 E	2.62	632.90
5304.00	30.30	163.00	5157.16	657.87 S	162.63 E	2.25	676.94
5398.00	31.30	158.10	5237.91	703.21 S	178.68 E	2.87	724.97
5491.00	30.50	153.10	5317.73	746.68 S	198.37 E	2.89	772.25
5584.00	30.10	153.80	5398.02	788.65 S	219.34 E	0.57	818.46
5679.00	29.90	156.00	5480.30	831.66 S	239.49 E	1.18	865.42
5770.00	30.70	158.80	5558.87	874.04 S	257.12 E	1.78	911.07
5830.00	30.50	161.60	5610.52	902.77 S	267.46 E	2.40	941.55
5855.00	30.10	158.10	5632.10	914.60 S	271.81 E	7.24	954.14 S 16.55 E, 954.14'

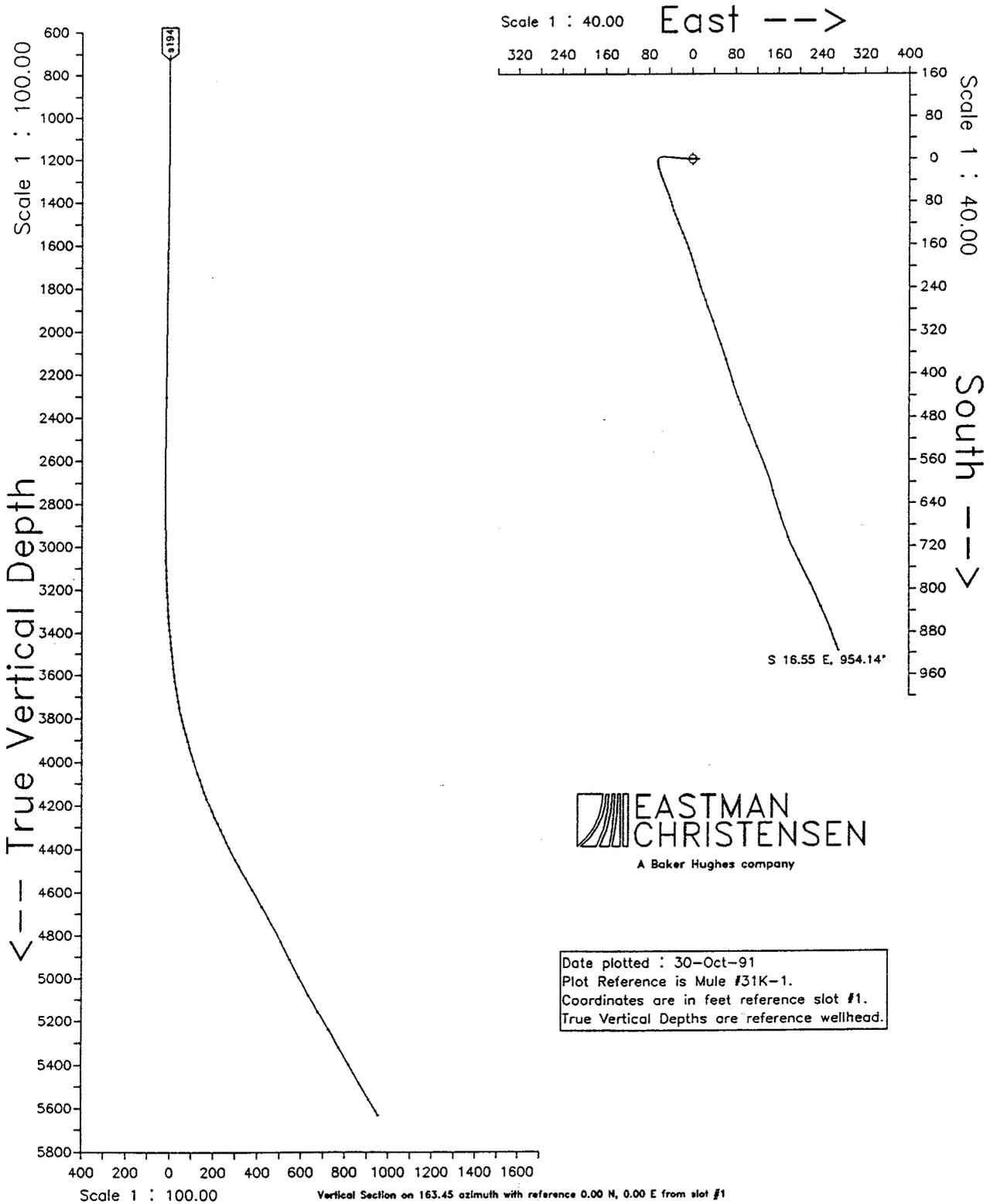
All data is in feet unless otherwise stated  
Coordinates are from slot #1 and TVDs are from wellhead.  
Vertical section is from wellhead on azimuth 163.45 degrees.  
Calculation uses the minimum curvature method.

# CHUSKA ENERGY COMPANY

Structure : MULE 31K-1

Field : SEC.-31T41S-R24E

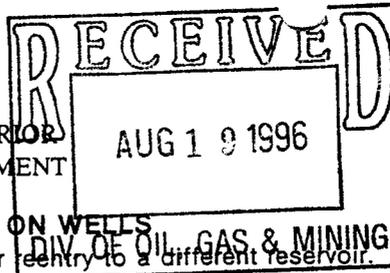
Location : SAN JUAN COUNTY, UTAH



**EASTMAN  
CHRISTENSEN**  
A Baker Hughes company

Date plotted : 30-Oct-91  
 Plot Reference is Mule #31K-1.  
 Coordinates are in feet reference slot #1.  
 True Vertical Depths are reference wellhead.

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT



FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

**SUNDRY NOTICES AND REPORTS ON WELLS**

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

5. Lease Designation and Serial No.  
NOG 8707-1231

6. If Indian, Allottee or Tribe Name

Navajo

7. If Unit or CA, Agreement Designation  
N/A

**SUBMIT IN TRIPLICATE**

1. Type of Well

Oil Well  Gas Well  Other Shut-In

8. Well Name and No.

Mule 31K (N)

2. Name of Operator

Harken Southwest Corporation

9. API Well No.

43-037-31617

3. Address and Telephone No.

P.O. Box 612007 Dallas, Texas 75261-2007 (214)753-6900

10. Field and Pool, or Exploratory Area

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

NE/SW Sec. 31-41S-24E  
1650' FSL & 2030' FWL

11. County or Parish, State

San Juan, Utah

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back
	<input type="checkbox"/> Casing Repair
	<input type="checkbox"/> Altering Casing
	<input checked="" type="checkbox"/> Other <u>Status</u>
	<input type="checkbox"/> Change of Plans
	<input type="checkbox"/> New Construction
	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Harken Southwest (HSW) continues to work with the Utah Geological Survey on a Department of Energy, Class II Project. The enhanced recovery study is not yet complete. Currently a computer reservoir simulation study is in process.

The subject wellbore continues to be utilized as a pressure/reservoir monitoring well. Previous BHP measurements have been reported on Sundry Notices. Additional pressure monitoring test are scheduled within the next 30 - 45 days.

In addition, HSW has a permit request to perform seismic acquisition, in the Mule area, before the Navajo Nation Tribal Council and the Bureau of Indian Affairs. This seismic activity is scheduled to be performed during 1996. Processing and interpretation of the seismic data will take 6 to 8 months.

Therefore, HSW plans to maintain the current well status of shut-in. Since the 8-5/8" csg is set @ 520' MD and the 5-1/2" csg is set @ 6185' MD with adequate cement, HSW's technical staff does not believe there is a contamination risk associated with maintaining a SI status.

CC: Navajo Nation-Minerals Dept; State of Utah; BIA - Gallup, NM

I hereby certify that the foregoing is true and correct

Signed

*Rachelle Joutsonery*

Title

Production Administrator

Date

08/16/96

(This space for Federal or State office use)

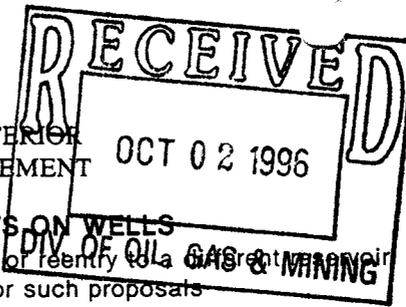
Approved by

Conditions of approval, if any:

Title

Date

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT



FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

**SUNDRY NOTICES AND REPORTS ON WELLS**

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NOG 8707-1231

6. If Indian, Allottee or Tribe Name

Navajo

7. If Unit or CA, Agreement Designation

N/A

8. Well Name and No.

Mule 31K (N)

9. API Well No.

43-037-31617

10. Field and Pool, or Exploratory Area

11. County or Parish, State

San Juan, Utah

**SUBMIT IN TRIPLICATE**

1. Type of Well

Oil Well  Gas Well  Other Shut-In

2. Name of Operator

Harken Southwest Corporation

3. Address and Telephone No.

P.O. Box 612007 Dallas, Texas 75261-2007 (972) 753-6900

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

NE/SW Section 31-41S-24E  
1650' FSL & 2030' FWL

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- Notice of Intent  
 Subsequent Report  
 Final Abandonment Notice

TYPE OF ACTION

- Abandonment  
 Recompletion  
 Plugging Back  
 Casing Repair  
 Altering Casing  
 Other Status
- Change of Plans  
 New Construction  
 Non-Routine Fracturing  
 Water Shut-Off  
 Conversion to Injection  
 Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Harken Southwest (HSW) continues to work with the Utah Geological Survey on a Department of Energy Class II Project.

HSW recently received approval to run seismic and completed said seismic acquisition. This data is currently being processed by the data company and is expected to be forwarded to HSW for evaluation within the next +/- 30 days. Upon receiving favorable seismic interpretation, industry partners will be surveyed for a proposal to drill a short radius horizontal wellbore and complete for commercial production.

HSW does not believe there is a contamination risk associated with maintaining the current well status and respectfully request a six month extension until March 1, 1996.

CC: State of Utah  
Navajo Nation - Minerals Dept  
BIA - Gallup, NM

14. I hereby certify that the foregoing is true and correct.

Signed [Signature]

Title Production Administrator

Date 09/30/96

(This space for Federal or State office use)

Approved by [Signature]  
Conditions of approval, if any.

Title Petroleum Engineer

Date 10/2/96

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED  
OCT 2 1996  
CONFIDENTIAL  
DIV. OF OIL, GAS & MINING

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

**SUNDRY NOTICES AND REPORTS ON WELLS**

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Use "APPLICATION FOR PERMIT—" for such proposals

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NOG 8707-1231

6. If Indian, Allottee or Tribe Name

Navajo

7. If Unit or CA, Agreement Designation

N/A

8. Well Name and No.

Mule 31K (N)

9. API Well No.

43-037-31617

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11. County or Parish, State

San Juan, Utah

**SUBMIT IN TRIPLICATE**

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Oil Well     Gas Well     Other

2. Name of Operator

Harken Southwest Corporation

3. Address and Telephone No.

P.O. Box 612007, Dallas, Texas 75261-2007 (972)753-6900

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

NE/SW Section 31-41S-24E

692' FSL & 2296' FWL

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<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion	<input type="checkbox"/> New Construction
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Altering Casing	<input type="checkbox"/> Conversion to Injection
	<input checked="" type="checkbox"/> Other <u>Informational</u>	<input type="checkbox"/> Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

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The subject wellbore is being utilized as a pressure monitoring well for the DOE Class II enhanced recovery project.

Attached please find the most recent bottom hole pressure measurement.

**\*\*\* Please consider this submittal CONFIDENTIAL \*\*\***

CC: State of Utah  
Navajo Nation (Minerals Dept)

14. I hereby certify that the foregoing is true and correct

Signed

*R. Montgomery* Title Production Administrator

Date 10/25/96

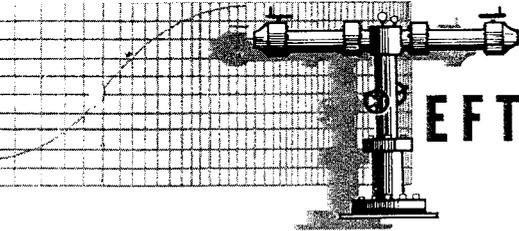
(This space for Federal or State office use)

Approved by

Title

Date

Conditions of approval, if any:



BHP • BU • PI • DD • GWT • RFS • GOR • FL • TS

# TEFTELLER, INC.

reservoir engineering data

MIDLAND, TEXAS / FARMINGTON, NEW MEXICO  
GRAND JUNCTION, COLORADO

P. O. Box 5278  
Midland, Texas 79704-5278  
(915) 694-0477

Midland Fax (915) 694-7602  
Farmington Fax (505) 325-1148  
Grand Junction Fax (970) 241-7634

October 09, 1996

Harken Southwest Corp.  
2110 N. Sullivan, Ste. 4  
Farmington, NM 87499

**CONFIDENTIAL**

Attention: Mr. Richard Cottle

Subject: Bottomhole Pressure Measurement  
Mule No. 31-K  
San Juan County, Utah  
Our File No. 2-29017-P

Dear Mr. Cottle:

Attached hereto is the results of a bottomhole pressure measurement which was conducted on the above captioned well October 03, 1996.

The data presented are in tabular and graphical form.

It has been our pleasure to have conducted this service for you. If we may be of further assistance, please call us at any time.

Respectfully submitted,  
TEFTELLER, INC.

**CONFIDENTIAL**

*Neil Tefteller*  
Neil Tefteller

NT/db

TEFTELLER INC

RESERVOIR ENGINEERING DATA

P.O. BOX 5278 MIDLAND, TEXAS 79704

(915) 694-0477

CONFIDENTIAL

COMPANY :	HARKEN SOUTHWEST CORP	WELL NAME :	MULE # 31-K
FIELD :		RESERVOIR :	DESERT CREEK
PERFS :	6003-6029	TEST DATE :	10/03/1996

CONFIDENTIAL

TEFTELLER INC

Pressure Gradient Report

COMP : HARKEN SOUTHWEST CORP WELL : MULE # 31-K T : 0.0  
FIELD : RES : DESERT CREEK DATUM : 6016.0  
DATE : 10/03/1996 STATUS : S.I. HRS : 0.0  
TBG : 2-7/8 DPTH : END : 5807 PKR : S N :  
CSG : 5-1/2 DPTH : 6162 PERFS : 6003-6029 GRAD : 0.267000 T D : 6090 PB

Depth (ft)	Pressure (psig)	Delta P (psi)	Gradient (psi/ft)
0	196.0		
1000	199.0	3.0	0.0030
2000	204.0	5.0	0.0050
3000	495.0	291.0	0.2910
4000	828.0	333.0	0.3330
5000	1129.0	301.0	0.3010
5500	1271.0	142.0	0.2840
6016	1409.0	138.0	0.2674
6016	1409.0	0.0	

REMARKS : CASING PRESSURE 90  
TOP OF FLUID @ 2128

TUBING PRESSURE 196  
BHT @ 6016 = 128

CONFIDENTIAL

HARKEN SOUTHWEST CORP  
MULE # 31-K  
10/03/1996

TEFTELLER INC.

GRADIENT

0

1600

3200

4800

6400

8000

DEPTH (ft)

CONFIDENTIAL

0

200

400

600

800

1000

1200

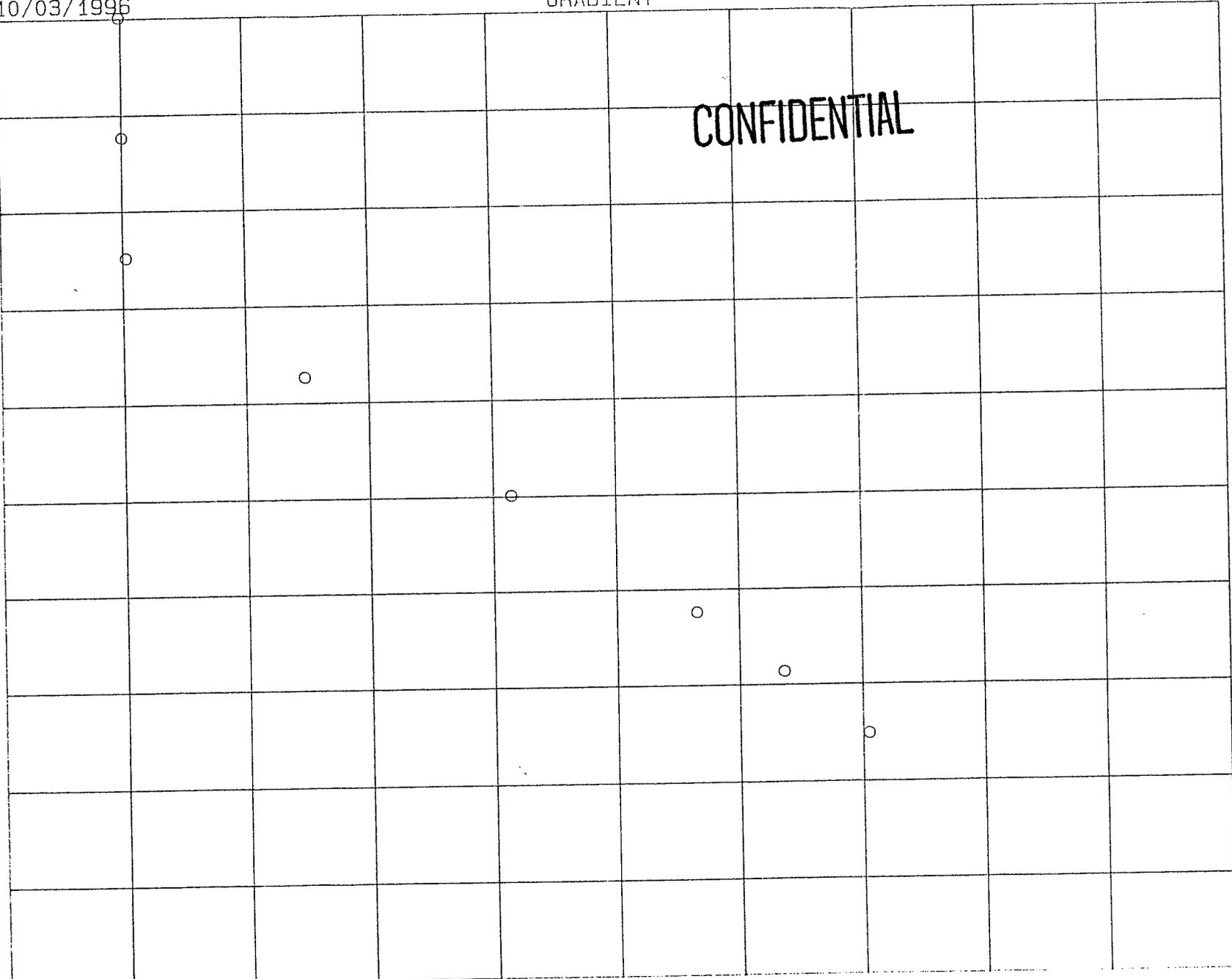
1400

1600

1800

2000

P (psig)



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

**SUNDRY NOTICES AND REPORTS ON WELLS**

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5. Lease Designation and Serial No.

NOG 8707-1231

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Navajo Nation

7. If Unit or CA, Agreement Designation

N/A

8. Well Name and No.

Mule 31K (N)

9. API Well No.

43-037-31617

10. Field and Pool, or Exploratory Area

11. County or Parish, State

San Juan County, UT

**SUBMIT IN TRIPLICATE**

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Oil Well  Gas Well  Other

2. Name of Operator

Harken Southwest Corporation

3. Address and Telephone No.

P.O. Box 612007 Dallas, TX 75261-2007 (972) 753-6900

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

NE/SW Section 31-41S-24E  
692' FSL & 2296' FWL

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

TYPE OF ACTION

- Notice of Intent  
 Subsequent Report  
 Final Abandonment Notice

- Abandonment  
 Recompletion  
 Plugging Back  
 Casing Repair  
 Altering Casing  
 Other Sidetrack

- Change of Plans  
 New Construction  
 Non-Routine Fracturing  
 Water Shut-Off  
 Conversion to Injection  
 Diagnose Water

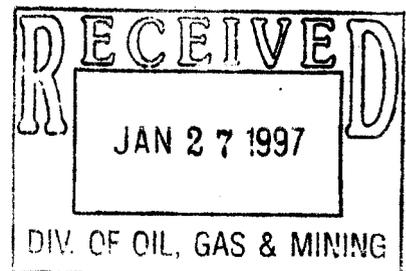
13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of start and completion on Well (Footage, Sec., T., R., M., or Survey Description) and give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Handle completion on Well (Footage, Sec., T., R., M., or Survey Description) and Log form. (Sectionally drilled, etc.)  
as  
APD  
(per RJF)  
3/21/97  
BTS  
Drilling - Horizontal Lateral

Please reference the attached documentation

- Proposed procedures
- Well Profile Data as prepared by Baker Hughes Inteq
- Proposed wellbore diagram

cc: Navajo Nation - Minerals Department  
BIA  
State of Utah



14. I hereby certify that the foregoing is true and correct

Signed Russell Montgomery Title Production Administrator Date 01/23/97

(This space for Federal or State office use)

Approved by \_\_\_\_\_ Title \_\_\_\_\_  
Condition of approval, if any: \_\_\_\_\_

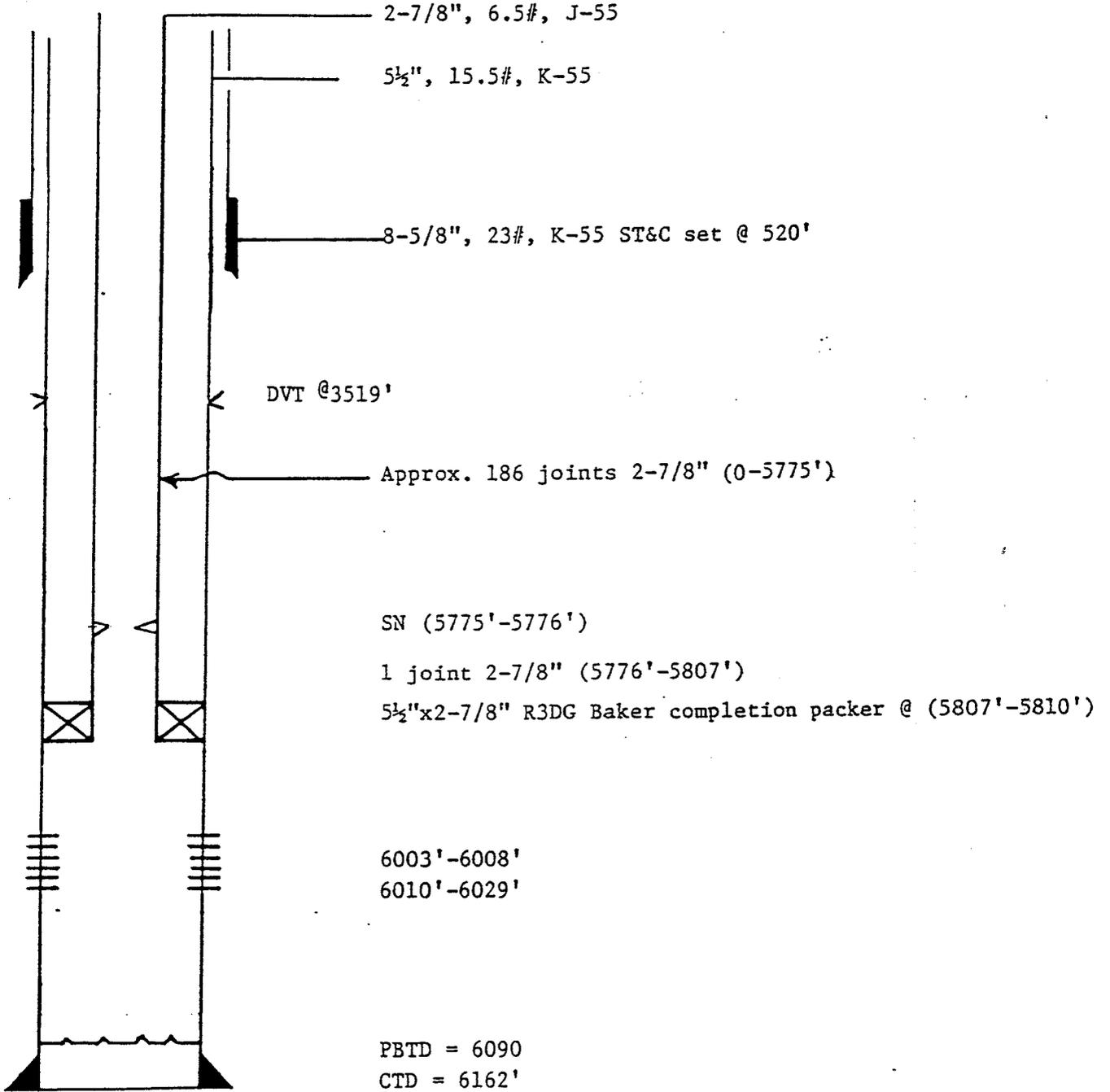
**Accepted by the  
Utah Division of  
Oil, Gas and Mining**

**FOR RECORD ONLY**

# CURRENT WELLBORE DIAGRAM

MULE 31-K-1 (N)  
NE/SW Sec. 31-41S-24E  
San Juan Co., Utah

Spud: 10-13-91  
T.D. : 11-7-91  
Completed: 11-26-91



## Mule 31K(N)

NOG 8707-1231 / 43-037-31617

Section 31-41S-24E

692' FSL & 2296' FWL (NE/SW)

San Juan County, Utah

**CURRENT WELL STATUS:** Shut-in

**PBTD:** 6090' MD

**Casing:** 8-5/8" K-55 23# set @ 520' MD w/375 sx Class "G" + additives  
5-1/2" K-55 15.5# 6185' MD stage cemented as follows:  
Stage 1 - 376 sx 65/35 Poz, 260 sx Class "G" + additives  
Stage 2 - 961 sx 65/35 Poz, 100 sx Class "G" + additives  
DV Tool set @ 3519' MD

**Perforations:** 6003-08' (5') .46" @ 4 JSPF (20 shots) - Desert Creek  
6010-29' (19') .46" @ 4 JSPF (76 shots) - Desert Creek

### Proposed sidetrack procedures:

1. MIRU. Hold safety meeting. Install BOP. Release packer, kill well and circulate hole clean. POOH with tubing.
2. Mill out 5-1/2" casing from 5870' MD to 5900' MD and set cement plug from 5670' MD to 6000' MD.
3. TIH w/4-3/4" bit and directional BHA. Kick off at +/- 5879'. Build angle at a MD of 6352'. Use produced water for mud and pump PHPA polymer sweeps to keep hole clean.
4. Drill sidetrack from 6352' MD to 6890' MD per attached well profile. Sidetrack section is in the current well's producing section of the Desert Creek formation at a TVD of 5803' (-213' SS; 16,003' MD).
5. POOH w/drilling assembly and TIH with tubing to perform acid clean-up job.
6. RIH with pumping equipment to 5900' MD and put well on production.

----- WELL PROFILE DATA -----

Point	MD	Inc	Dir	TVD	North	East	V. Sect	Deg/100
Tie on	5879.30	30.40	160.00	5650.00	-941.71	265.16	-948.13	0.00
End of Build/Turn	5886.00	32.50	163.79	5655.72	-945.04	266.24	-951.55	43.00
End of Hold	5901.00	32.50	163.79	5668.37	-952.77	268.49	-959.37	0.00
End of Build/Turn	6137.76	91.50	280.00	5806.00	-1010.42	127.95	-939.02	44.36
End of Drop/Turn	6352.23	90.00	330.00	5803.00	-891.27	-42.18	-750.78	23.32
T.D. & End of Hold	6890.00	90.00	330.00	5803.00	-425.55	-311.06	-213.01	0.00

<- West (feet)

560 480 400 320 240 160 80 0 80 160 240 320

# HARKEN ENERGY

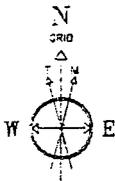
Structure : MULE 31K - 1

Slot : slot #1

Field : SEC. 31-41S-24E

Location : SAN JUAN COUNTY, UTAH

Created by planner  
 Date plotted : 14-Jan-97  
 Plot Reference is 1-14-96, sj.  
 Coordinates are in feet reference slot #1.  
 True Vertical Depths are reference rotary table.  
 --- Baker Hughes INTEQ ---



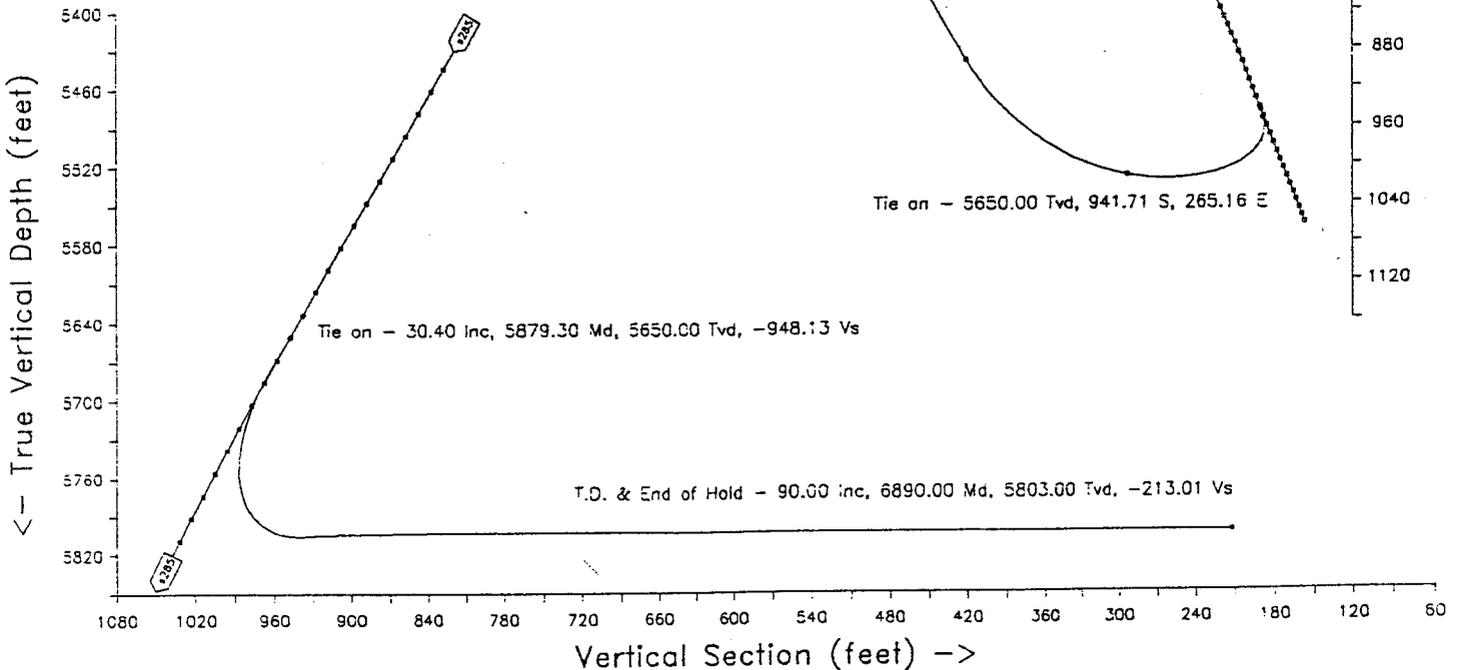
12-Jan-97  
 Magnetic North is 12.28 degrees East of True North  
 GRID North is 1.33 degrees East of True North  
 To correct azimuth from True to GRID subtract 1.33 deg  
 To correct azimuth from Magnetic to GRID add 10.95 deg

T.D. & End of Hold - 5803.00 Tvd, 425.55 S, 311.06 W

Tie on - 5650.00 Tvd, 941.71 S, 265.16 E

Tie on - 30.40 Inc, 5879.30 Md, 5650.00 Tvd, -948.13 Vs

T.D. & End of Hold - 90.00 Inc, 6890.00 Md, 5803.00 Tvd, -213.01 Vs



Azimuth 330.00 with reference 0.00 S, 0.00 E from slot #1

HARKEN ENERGY  
MULE 31K - 1

slot #1  
SEC. 31-41S-24E  
SAN JUAN COUNTY, UTAH

PROPOSAL LISTING

by  
Baker Hughes INTEQ

Your ref : 1-14-96, ej  
Our ref : prop264  
License :

Date printed : 14-Jan-97  
Date created : 13-Jan-97  
Last revised : 14-Jan-97

Field is centred on n36 28 0.166,w118 18 20.683  
Structure is centred on 2633718.000,193441.000,999.00000,N

Slot location is n37 10 39.700,w109 19 29.187  
Slot Grid coordinates are N 193441.000, E 2633718.000  
Slot local coordinates are 0.00 N 0.00 E

Projection type: lambert - Utah South (4303), Spheroid: Clarke - 1866

Reference North is Grid North

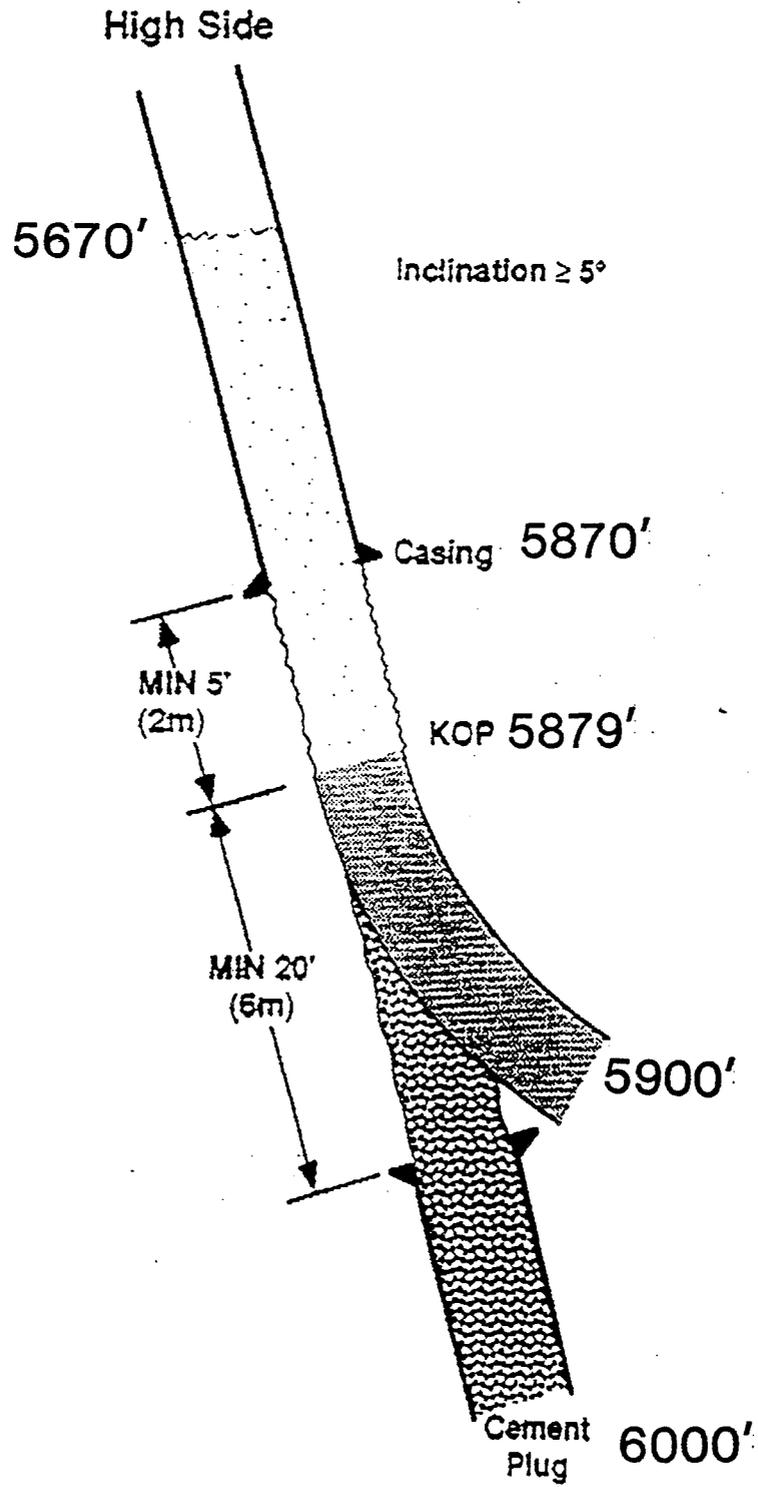
HARKEN ENERGY  
 MULE 31K - 1, slot #1  
 SEC. 31-41S-24E, SAN JUAN COUNTY, UTAH

PROPOSAL LISTING Page 1  
 Your ref : 1-14-96, ej  
 Last revised : 14-Jan-97

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100ft	Vert Sect
5879.30	30.40	160.00	5650.00	941.71 S	265.16 E	0.00	-948.13
5886.00	32.50	163.79	5655.72	945.04 S	266.24 E	43.00	-951.55
5901.00	32.50	163.79	5668.37	952.77 S	268.49 E	0.00	-959.37
6000.00	41.77	239.01	5751.13	997.50 S	246.56 E	44.36	-987.14
6100.00	77.02	271.51	5802.23	1014.21 S	165.20 E	44.36	-960.93
6137.76	91.50	280.00	5806.00	1010.42 S	127.95 E	44.36	-939.02
6200.00	91.14	294.51	5804.56	992.01 S	68.69 E	23.32	-893.45
6300.00	90.41	317.83	5803.19	933.40 S	11.47 W	23.32	-802.61
6352.23	90.00	330.00	5803.00	891.27 S	42.18 W	23.32	-750.78
6500.00	90.00	330.00	5803.00	763.30 S	116.06 W	0.00	-603.01
6890.00	90.00	330.00	5803.00	425.55 S	311.06 W	0.00	-213.01

All data is in feet unless otherwise stated.  
 Coordinates from slot #1 and TVD from rotary table.  
 Bottom hole distance is 527.12 on azimuth 216.17 degrees from wellhead.  
 Vertical section is from S 0.00 E 0.00 on azimuth 330.00 degrees.  
 Calculation uses the minimum curvature method.  
 Presented by Baker Hughes INTEQ

Mule 31K (N)  
1/97 Proposed  
NE/SW Sec 31-41S-24E  
San Juan Co., Utah



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

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11. County or Parish, State

San Juan, Utah

**SUBMIT IN TRIPLICATE**

1. Type of Well

Oil Well  Gas Well  Other

2. Name of Operator

Harken Southwest Corp.

3. Address and Telephone No.

P.O. Box 612007 Dallas, TX 75261-2007 (972) 753-6900

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

NE/SW Section 31-41S-24E

~~692'~~ FSL & ~~2296'~~ FWL

1650

2030 per Rachel Montgomery of Harken

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

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 Final Abandonment Notice

TYPE OF ACTION

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 Altering Casing  
 Other sidetrack

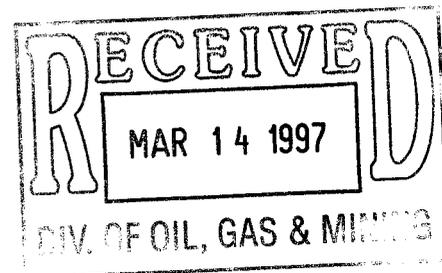
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 New Construction  
 Non-Routine Fracturing  
 Water Shut-Off  
 Conversion to Injection  
 Dispose Water

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Please be advised Harken Southwest began sidetrack operations, as outlined in the sundry notice dated 1/23/97, on Saturday, March 8, 1997.

CC: State of Utah  
Navajo Nation - Minerals Dept  
BIA



14. I hereby certify that the foregoing is true and correct

Signed [Signature] Title Production Administrator Date 3/11/97

(This space for Federal or State office use)

Approved by \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_  
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

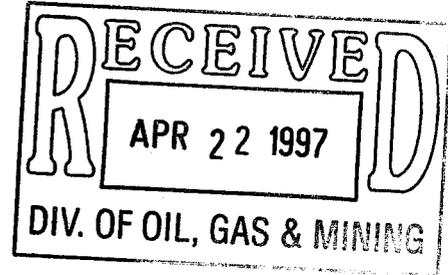


# HARKEN SOUTHWEST CORPORATION

(formerly Chuska Energy Company)

April 21, 1997

State of Utah  
Division of Oil, Gas & Mining  
1594 West North Temple, Suite 1210  
Salt Lake City, UT 84114



ATTENTION: Christi

RE: Mule 31K (N)  
43-037-31617  
San Juan County, Utah

Dear Christi:

43-037-31617

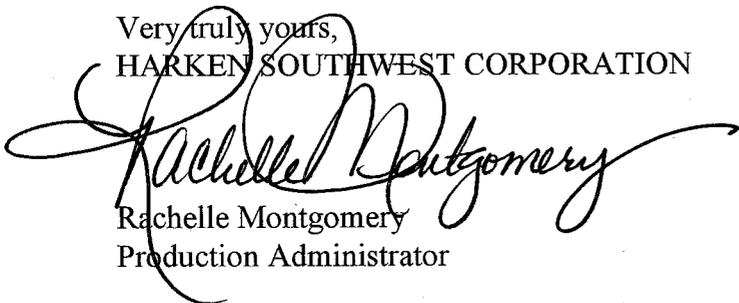
Subsequent to our telephone conversation on Thursday of last week, I believe the location discrepancy comes from the difference between the surface location and the subsurface (bottom hole) location on the above referenced wellbore.

Somewhere during the chain of copying location information from sundry notice to sundry notice the surface location was dropped and only the subsurface location was reported. Which is what happened on the Notice of Intent to re-enter dated 1/23/97 and the notice of commencement of operations dated 3/11/97. Therefore, in an endeavor to clarify your records, please note the following:

Mule 31K(N) - NE/SW Section 31-Township 41S-Range 24E  
**SURFACE LOCATION:** 1650' FSL & 2030' FWL  
**SUBSURFACE (Bottom Hole) LOCATION:** 692' FSL & 2296' FWL

I trust this will resolve any discrepancies you have within your records. I sincerely apologize for any inconvenience this may have caused. We will utilize the correct surface location from this point forward.

Very truly yours,  
HARKEN SOUTHWEST CORPORATION

  
Rachelle Montgomery  
Production Administrator

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLIC.

(See other instructions on reverse side)

FORM APPROVED  
OMB NO. 1004-0137  
Expires: February 28, 1995

5. LEASE DESIGNATION AND SERIAL NO.

NOG 8707-1231

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

Navajo

7. UNIT AGREEMENT NAME

N/A

8. FARM OR LEASE NAME, WELL NO.

Mule 31K(N)

9. API WELL NO.

43-037-31617

10. FIELD AND POOL, OR WILDCAT

11. SEC. T., R., M., OR BLOCK AND SURVEY OR AREA

Section 31-41S-24E

12. COUNTY OR PARISH

San Juan

13. STATE

Utah

WELL COMPLETION OR RECOMPLETION REPORT AND LOG \*

1a. TYPE OF WELL: OIL WELL  GAS WELL  DRY  Other \_\_\_\_\_

b. TYPE OF COMPLETION: NEW WELL  WORK OVER  DEEP-EN  PLUG BACK  DIFF. REVR.  Other Sidetrack  
Re-entry

2. NAME OF OPERATOR

Harken Southwest Corporation

3. ADDRESS AND TELEPHONE NO.

P.O. Box 612007 Dallas, Texas 76261 (972) 753-6900

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)\*

At surface 1650' FSL & 2030' FWL

At top prod. interval reported below

At total depth

1110' FSL & 1300' FWL

14. PERMIT NO.

DATE ISSUED

01-27-97

15. DATE SPUDDED

16. DATE T.D. REACHED

03-27-97

17. DATE COMPL. (Ready to prod.)

3.27.97  
W/O Completion

18. ELEVATIONS (DF, RKB, RT, GR, ETC.)\*

19. ELEV. CASINGHEAD

20. TOTAL DEPTH, MD & TVD

21. PLUG BACK T.D., MD & TVD

22. IF MULTIPLE COMPL., HOW MANY\*

23. INTERVALS DRILLED BY

ROTARY TOOLS

CABLE TOOLS

7044' MD/5807' TVD

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)\* DSCR  
\*Re-evaluating; may resume swabbing to recover water lost during initial re-entry procedures.

25. WAS DIRECTIONAL SURVEY MADE

26. TYPE ELECTRIC AND OTHER LOGS RUN

27. WAS WELL CORED

28. CASING RECORD (Report all strings set in well)

CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	TOP OF CEMENT, CEMENTING RECORD	AMOUNT PULLED
8 5/8" K-55	23#	520' MD	Both casing strings were set during original completion		0
5 1/2" K-55	15.5#	6185' MD	*3/97 milled window in 5-1/2" csg string from 5831-75'; CTBP @ 5950' w/35' sx CL "G"		

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	30. TUBING RECORD
					SIZE
					DEPTH SET (MD)
					PACKER SET (MD)

31. PERFORATION RECORD (Interval, size and number)

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
6960-6900'	1000 gal 15% HCL
6900-6700'	1000 gal 15% HCL
6700-6550'	2000 gal 15% HCL

\*\*See reverse\*\*

33. PRODUCTION

DATE FIRST PRODUCTION \_\_\_\_\_ PRODUCTION METHOD (Flooding, gas lift, pumping—size and type of pump) \_\_\_\_\_ WELL STATUS (Producing or shut-in) Shut-in

\*None to date; shut-in for evaluation

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

35. LIST OF ATTACHMENTS

Baker Hughes Integ Well Profile Data and Survey

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Montgomery TITLE Production Administrator DATE 6/12/97

(See Instructions and Spaces for Additional Data on Reverse Side)

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries);

GEOLOGIC MARKERS

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.	NAME	TOP	
					MEAS. DEPTH	TRUE VERT. DEPTH
			No cores or DST's run.	re-entry		

**CONFIDENTIAL**

RECEIVED  
 JUN 12 1968  
 DIVISION OF OIL & GAS

**CONFIDENTIAL**

Acid Treatment Continued

6550-6430' MD w/3000 gal 15% HCl  
 6100-5980' MD w/2000 gal 15% HCl

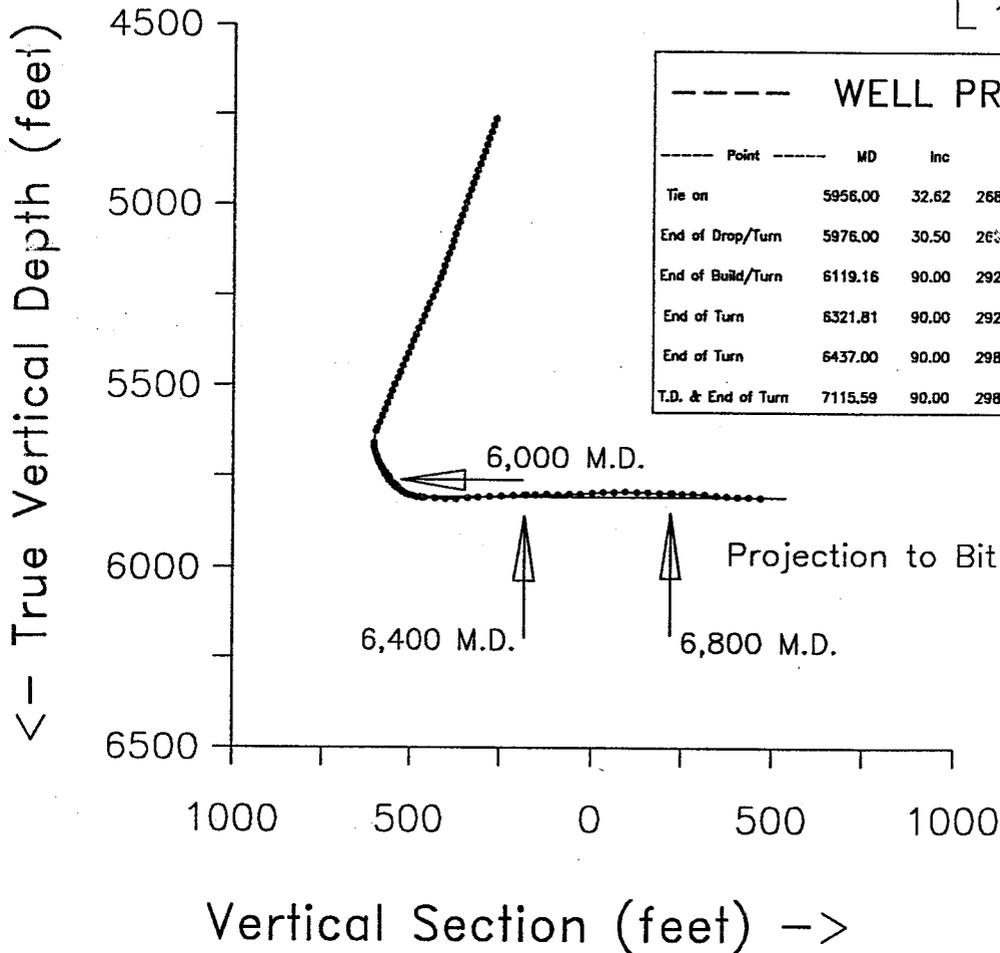
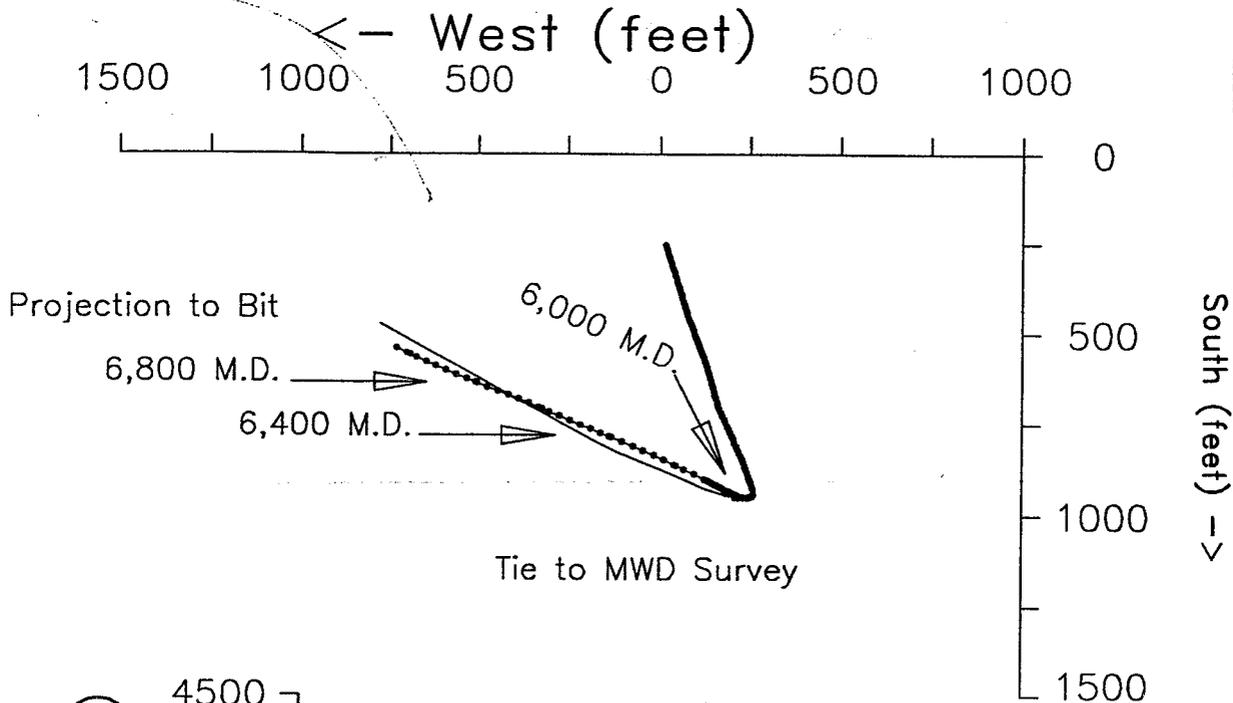
# HARKE ENERGY CORPORATION

Structure : SEC.31-T41S-R24E

Well : MULE 31K-1

Field : SAN JUAN COUNTY

Location : UTAH.



WELL PROFILE DATA								
Point	MD	Inc	Dir	TVD	North	East	V. Sect	Deg/100
Tie on	5956.00	32.62	268.74	5721.38	-950.58	235.91	-581.72	0.00
End of Drop/Turn	5976.00	30.50	268.70	5738.42	-950.81	225.44	-572.14	10.60
End of Build/Turn	6119.16	90.00	292.54	5807.00	-921.23	111.54	-455.59	43.54
End of Turn	6321.81	90.00	292.55	5807.00	-843.54	-75.62	-252.94	0.01
End of Turn	6437.00	90.00	298.30	5807.00	-794.11	-179.61	-137.95	4.99
T.D. & End of Turn	7115.59	90.00	298.30	5807.00	-472.43	-777.12	537.17	0.00

Azimuth 292.50 with reference 0.00 N, 0.00 E from SLOT #1

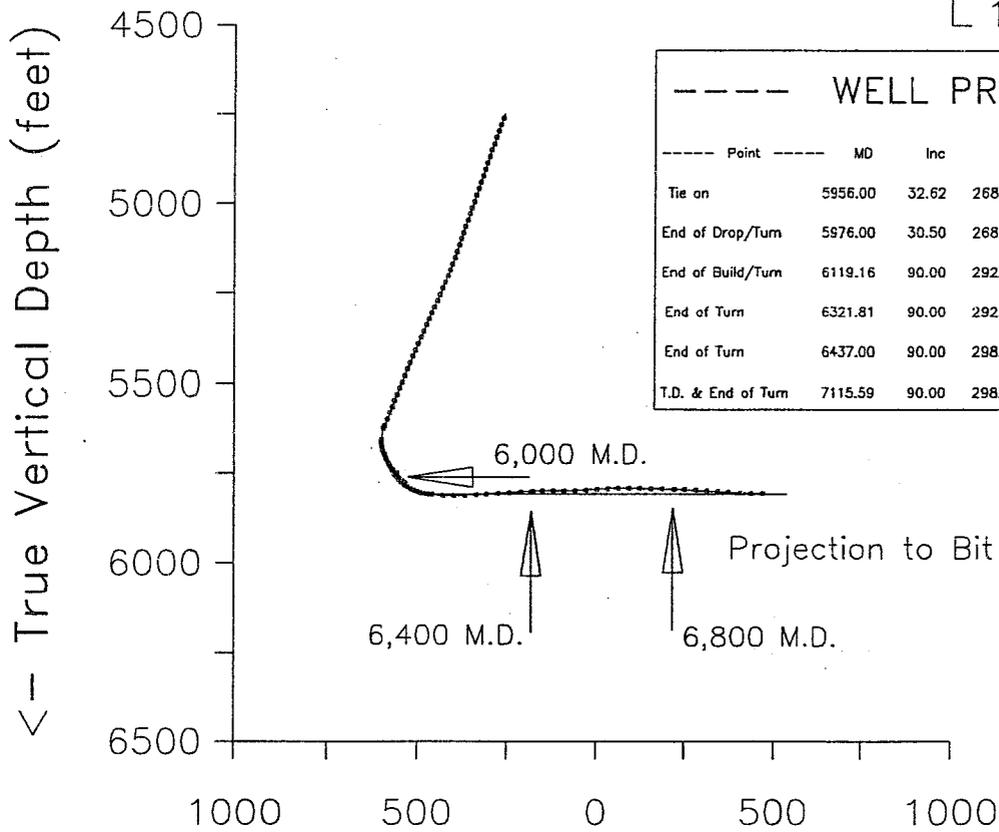
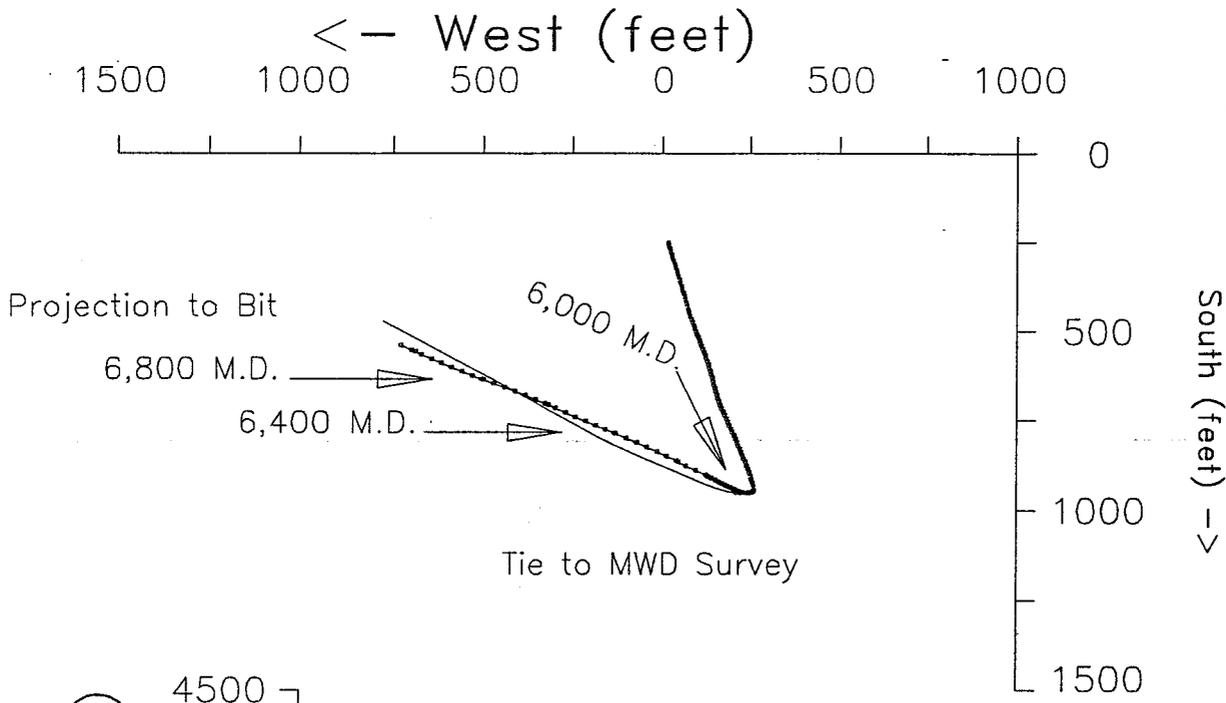
# HARKEN ENERGY CORPORATION

Structure : SEC.31-T41S-R24E

Well : MULE 31K-1

Field : SAN JUAN COUNTY

Location : UTAH.



----- WELL PROFILE DATA -----									
Point	MD	Inc	Dir	TVD	North	East	V. Sect	Deg/100	
Tie on	5956.00	32.62	268.74	5721.38	-950.58	235.91	-581.72	0.00	
End of Drop/Turn	5976.00	30.50	268.70	5738.42	-950.81	225.44	-572.14	10.60	
End of Build/Turn	6119.16	90.00	292.54	5807.00	-921.23	111.54	-455.59	43.54	
End of Turn	6321.81	90.00	292.55	5807.00	-843.54	-75.62	-252.94	0.01	
End of Turn	6437.00	90.00	298.30	5807.00	-794.11	-179.61	-137.95	4.99	
T.D. & End of Turn	7115.59	90.00	298.30	5807.00	-472.43	-777.12	537.17	0.00	

Vertical Section (feet) ->

Azimuth 292.50 with reference 0.00 N, 0.00 E from SLOT #1

HARKEN ENERGY CORPORATION  
SEC.31-T41S-R24E

MULE 31K-1  
SLOT #1  
SAN JUAN COUNTY  
UTAH.

S U R V E Y L I S T I N G

by  
Baker Hughes INTEQ

Your ref : MWD Sidetrack #1  
Our ref : svy3886  
License :

Date printed : 1-May-97  
Date created : 23-Mar-97  
Last revised : 1-May-97

Field is centred on n37 40 0.000,w109 15 0.000,-111  
Structure is centred on n37 40 0.000,w109 15 0

Slot location is n37 40 0.000,w109 15 0.000  
Slot Grid coordinates are N -234671.948, E 2651633.406  
Slot local coordinates are 0.00 N 0.00 E

Projection type: lambert - Utah Central (4302), Spheroid: Clarke - 1866

Reference North is Grid North

HARKEN ENERGY CORPORATION  
 SEC.31-T41S-R24E,MULE 31K-1  
 SAN JUAN COUNTY,UTAH.

SURVEY LISTING Page 1  
 Your ref : MWD Sidetrack #1  
 Last revised : 1-May-97

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100ft	Vert Sect
0.00	0.00	0.00	0.00	0.00 N	0.00 E	0.00	0.00
520.00	0.00	0.00	520.00	0.00 N	0.00 E	0.00	0.00
532.00	0.60	254.00	532.00	0.02 S	0.06 W	5.00	0.05
540.00	0.60	253.00	540.00	0.04 S	0.14 W	0.13	0.11
560.00	0.70	261.00	560.00	0.09 S	0.36 W	0.67	0.30
580.00	0.70	269.00	580.00	0.11 S	0.60 W	0.49	0.52
600.00	0.70	269.00	600.00	0.12 S	0.85 W	0.00	0.74
620.00	0.70	273.00	619.99	0.11 S	1.09 W	0.24	0.97
640.00	0.70	273.00	639.99	0.10 S	1.34 W	0.00	1.20
660.00	0.70	276.00	659.99	0.08 S	1.58 W	0.18	1.43
680.00	0.70	283.00	679.99	0.04 S	1.82 W	0.43	1.67
700.00	0.70	283.00	699.99	0.02 N	2.06 W	0.00	1.91
720.00	0.70	283.00	719.99	0.07 N	2.30 W	0.00	2.15
740.00	0.80	286.00	739.98	0.14 N	2.55 W	0.54	2.41
760.00	0.80	285.00	759.98	0.21 N	2.82 W	0.07	2.69
780.00	0.80	285.00	779.98	0.28 N	3.09 W	0.00	2.96
800.00	0.90	285.00	799.98	0.36 N	3.38 W	0.50	3.26
820.00	0.90	287.00	819.98	0.45 N	3.68 W	0.16	3.57
840.00	1.00	286.00	839.97	0.54 N	4.00 W	0.51	3.90
860.00	1.00	288.00	859.97	0.64 N	4.33 W	0.17	4.25
880.00	1.10	286.00	879.97	0.75 N	4.68 W	0.53	4.61
900.00	1.20	287.00	899.96	0.86 N	5.06 W	0.51	5.01
920.00	1.20	287.00	919.96	0.99 N	5.47 W	0.00	5.43
940.00	1.20	283.00	939.95	1.09 N	5.87 W	0.42	5.84
960.00	1.20	183.00	959.95	0.93 N	6.08 W	9.19	5.98

All data is in feet unless otherwise stated.  
 Coordinates from SLOT #1 and TVD from rotary table.  
 Bottom hole distance is 907.50 on azimuth 233.51 degrees from wellhead.  
 Vertical section is from wellhead on azimuth 292.50 degrees.  
 Calculation uses the minimum curvature method.  
 Presented by Baker Hughes INTEQ

HARKEN ENERGY CORPORATION  
 SEC. 31-T41S-R24E, MULE 31K-1  
 SAN JUAN COUNTY, UTAH.

SURVEY LISTING Page 2  
 Your ref : MWD Sidetrack #1  
 Last revised : 1-May-97

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100ft	Vert Sect
980.00	1.20	281.00	979.95	0.76 N	6.30 W	9.06	6.11
1000.00	1.20	282.00	999.94	0.85 N	6.71 W	0.10	6.52
1020.00	1.20	282.00	1019.94	0.93 N	7.12 W	0.00	6.94
1040.00	1.30	282.00	1039.93	1.02 N	7.55 W	0.50	7.37
1060.00	1.40	280.00	1059.93	1.11 N	8.01 W	0.55	7.83
1080.00	1.50	283.00	1079.92	1.22 N	8.51 W	0.63	8.32
1100.00	1.60	284.00	1099.92	1.34 N	9.03 W	0.52	8.86
1120.00	1.70	283.00	1119.91	1.48 N	9.59 W	0.52	9.43
1140.00	1.80	284.00	1139.90	1.62 N	10.19 W	0.52	10.03
1160.00	1.80	282.00	1159.89	1.76 N	10.80 W	0.31	10.65
1180.00	1.70	282.00	1179.88	1.89 N	11.40 W	0.50	11.25
1200.00	1.80	284.00	1199.87	2.02 N	11.99 W	0.59	11.85
1220.00	1.90	282.00	1219.86	2.17 N	12.62 W	0.60	12.49
1240.00	1.90	284.00	1239.85	2.32 N	13.27 W	0.33	13.14
1260.00	1.90	282.00	1259.84	2.47 N	13.91 W	0.33	13.80
1280.00	1.90	281.00	1279.83	2.60 N	14.56 W	0.17	14.45
1300.00	1.90	282.00	1299.82	2.73 N	15.21 W	0.17	15.10
1320.00	1.90	280.00	1319.80	2.86 N	15.86 W	0.33	15.75
1340.00	2.00	278.00	1339.79	2.96 N	16.53 W	0.60	16.41
1360.00	2.00	276.00	1359.78	3.05 N	17.23 W	0.35	17.08
1380.00	2.10	275.00	1379.77	3.12 N	17.94 W	0.53	17.77
1400.00	2.10	274.00	1399.75	3.18 N	18.67 W	0.18	18.46
1420.00	2.20	273.00	1419.74	3.22 N	19.42 W	0.53	19.17
1440.00	2.20	269.00	1439.73	3.23 N	20.19 W	0.77	19.89
1460.00	2.30	267.00	1459.71	3.21 N	20.97 W	0.64	20.60

All data is in feet unless otherwise stated.  
 Coordinates from SLOT #1 and TVD from rotary table.  
 Bottom hole distance is 907.50 on azimuth 233.51 degrees from wellhead.  
 Vertical section is from wellhead on azimuth 292.50 degrees.  
 Calculation uses the minimum curvature method.  
 Presented by Baker Hughes INTEQ

HARKEN ENERGY CORPORATION  
 SEC.31-T41S-R24E,MULE 31K-1  
 SAN JUAN COUNTY,UTAH.

SURVEY LISTING Page 3  
 Your ref : MWD Sidetrack #1  
 Last revised : 1-May-97

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100ft	Vert Sect
1480.00	2.30	269.00	1479.69	3.18 N	21.77 W	0.40	21.33
1500.00	2.30	271.00	1499.68	3.18 N	22.57 W	0.40	22.07
1520.00	2.30	272.00	1519.66	3.20 N	23.38 W	0.20	22.82
1540.00	2.30	273.00	1539.65	3.24 N	24.18 W	0.20	23.58
1560.00	2.30	273.00	1559.63	3.28 N	24.98 W	0.00	24.33
1580.00	2.30	274.00	1579.61	3.33 N	25.78 W	0.20	25.09
1600.00	2.30	276.00	1599.60	3.40 N	26.58 W	0.40	25.86
1620.00	2.30	276.00	1619.58	3.48 N	27.38 W	0.00	26.63
1640.00	2.30	276.00	1639.56	3.56 N	28.18 W	0.00	27.40
1660.00	2.30	276.00	1659.55	3.65 N	28.98 W	0.00	28.17
1680.00	2.30	274.00	1679.53	3.72 N	29.77 W	0.40	28.93
1700.00	2.40	274.00	1699.52	3.77 N	30.59 W	0.50	29.71
1720.00	2.30	274.00	1719.50	3.83 N	31.41 W	0.50	30.49
1740.00	2.40	274.00	1739.48	3.89 N	32.23 W	0.50	31.26
1760.00	2.30	273.00	1759.47	3.94 N	33.05 W	0.54	32.04
1780.00	2.20	272.00	1779.45	3.97 N	33.83 W	0.54	32.78
1800.00	2.10	272.00	1799.44	4.00 N	34.58 W	0.50	33.48
1820.00	2.10	271.00	1819.42	4.02 N	35.31 W	0.18	34.16
1840.00	2.00	270.00	1839.41	4.03 N	36.03 W	0.53	34.83
1860.00	2.10	271.00	1859.40	4.03 N	36.75 W	0.53	35.49
1880.00	2.00	271.00	1879.38	4.04 N	37.46 W	0.50	36.16
1900.00	2.00	272.00	1899.37	4.06 N	38.16 W	0.17	36.81
1920.00	2.00	271.00	1919.36	4.08 N	38.86 W	0.17	37.46
1940.00	2.00	271.00	1939.35	4.09 N	39.55 W	0.00	38.11
1960.00	1.90	270.00	1959.34	4.10 N	40.23 W	0.53	38.74

All data is in feet unless otherwise stated.  
 Coordinates from SLOT #1 and TVD from rotary table.  
 Bottom hole distance is 907.50 on azimuth 233.51 degrees from wellhead.  
 Vertical section is from wellhead on azimuth 292.50 degrees.  
 Calculation uses the minimum curvature method.  
 Presented by Baker Hughes INTEQ

HARKEN ENERGY CORPORATION  
 SEC.31-T41S-R24E,MULE 31K-1  
 SAN JUAN COUNTY,UTAH.

SURVEY LISTING Page 4  
 Your ref : MWD Sidetrack #1  
 Last revised : 1-May-97

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100ft	Vert Sect
1980.00	1.80	270.00	1979.33	4.10 N	40.88 W	0.50	39.34
2000.00	1.80	270.00	1999.32	4.10 N	41.51 W	0.00	39.92
2020.00	1.70	269.00	2019.31	4.09 N	42.12 W	0.52	40.48
2040.00	1.70	270.00	2039.30	4.09 N	42.71 W	0.15	41.03
2060.00	1.70	270.00	2059.29	4.09 N	43.31 W	0.00	41.57
2080.00	1.70	269.00	2079.28	4.08 N	43.90 W	0.15	42.12
2100.00	1.70	268.00	2099.27	4.07 N	44.49 W	0.15	42.66
2120.00	1.60	269.00	2119.26	4.05 N	45.07 W	0.52	43.19
2140.00	1.60	268.00	2139.25	4.04 N	45.63 W	0.14	43.70
2160.00	1.80	269.00	2159.25	4.02 N	46.22 W	1.01	44.24
2180.00	1.90	269.00	2179.24	4.01 N	46.86 W	0.50	44.83
2200.00	1.90	268.00	2199.22	3.99 N	47.53 W	0.17	45.44
2220.00	1.90	272.00	2219.21	3.99 N	48.19 W	0.66	46.05
2240.00	1.90	272.00	2239.20	4.02 N	48.85 W	0.00	46.67
2260.00	2.00	272.00	2259.19	4.04 N	49.53 W	0.50	47.31
2280.00	2.00	273.00	2279.18	4.07 N	50.23 W	0.17	47.97
2300.00	2.00	274.00	2299.17	4.11 N	50.93 W	0.17	48.62
2320.00	2.00	278.00	2319.15	4.19 N	51.62 W	0.70	49.29
2340.00	1.90	278.00	2339.14	4.28 N	52.29 W	0.50	49.95
2360.00	1.80	282.00	2359.13	4.39 N	52.93 W	0.82	50.58
2380.00	1.90	280.00	2379.12	4.52 N	53.56 W	0.60	51.22
2400.00	1.80	278.00	2399.11	4.62 N	54.20 W	0.60	51.84
2420.00	1.70	280.00	2419.10	4.71 N	54.80 W	0.59	52.44
2440.00	1.80	280.00	2439.09	4.82 N	55.41 W	0.50	53.03
2460.00	1.90	280.00	2459.08	4.93 N	56.04 W	0.50	53.66

All data is in feet unless otherwise stated.  
 Coordinates from SLOT #1 and TVD from rotary table.  
 Bottom hole distance is 907.50 on azimuth 233.51 degrees from wellhead.  
 Vertical section is from wellhead on azimuth 292.50 degrees.  
 Calculation uses the minimum curvature method.  
 Presented by Baker Hughes INTEQ

HARKEN ENERGY CORPORATION  
 SEC.31-T41S-R24E,MULE 31K-1  
 SAN JUAN COUNTY,UTAH.

SURVEY LISTING Page 5  
 Your ref : MWD Sidetrack #1  
 Last revised : 1-May-97

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100ft	Vert Sect
2480.00	2.10	282.00	2479.07	5.06 N	56.73 W	1.06	54.35
2500.00	2.10	280.00	2499.06	5.20 N	57.45 W	0.37	55.07
2520.00	1.70	274.00	2519.05	5.29 N	58.10 W	2.23	55.70
2540.00	1.50	270.00	2539.04	5.31 N	58.66 W	1.14	56.23
2560.00	1.20	265.00	2559.03	5.29 N	59.13 W	1.61	56.66
2580.00	1.00	263.00	2579.03	5.25 N	59.51 W	1.02	56.99
2600.00	0.90	237.00	2599.03	5.15 N	59.82 W	2.19	57.23
2620.00	1.20	210.00	2619.02	4.88 N	60.05 W	2.85	57.35
2640.00	1.40	195.00	2639.02	4.46 N	60.22 W	1.97	57.35
2660.00	1.60	195.00	2659.01	3.96 N	60.36 W	1.00	57.28
2680.00	1.60	191.00	2679.00	3.41 N	60.48 W	0.56	57.18
2700.00	1.90	190.00	2698.99	2.81 N	60.59 W	1.51	57.06
2720.00	1.70	191.00	2718.98	2.19 N	60.71 W	1.01	56.93
2740.00	1.70	190.00	2738.98	1.61 N	60.82 W	0.15	56.80
2760.00	1.60	190.00	2758.97	1.04 N	60.92 W	0.50	56.68
2780.00	1.60	190.00	2778.96	0.49 N	61.01 W	0.00	56.56
2800.00	1.50	188.00	2798.95	0.04 S	61.10 W	0.57	56.43
2820.00	1.40	185.00	2818.95	0.54 S	61.16 W	0.63	56.29
2840.00	1.30	186.00	2838.94	1.01 S	61.20 W	0.51	56.15
2860.00	1.30	188.00	2858.93	1.46 S	61.26 W	0.23	56.03
2880.00	1.20	179.00	2878.93	1.90 S	61.28 W	1.10	55.89
2900.00	1.10	182.00	2898.93	2.30 S	61.29 W	0.58	55.74
2920.00	1.10	186.00	2918.92	2.68 S	61.31 W	0.38	55.62
2940.00	1.00	186.00	2938.92	3.05 S	61.35 W	0.50	55.52
2960.00	0.80	195.00	2958.92	3.35 S	61.41 W	1.22	55.45

All data is in feet unless otherwise stated.  
 Coordinates from SLOT #1 and TVD from rotary table.  
 Bottom hole distance is 907.50 on azimuth 233.51 degrees from wellhead.  
 Vertical section is from wellhead on azimuth 292.50 degrees.  
 Calculation uses the minimum curvature method.  
 Presented by Baker Hughes INTEQ

HARKEN ENERGY CORPORATION  
 SEC.31-T41S-R24E,MULE 31K-1  
 SAN JUAN COUNTY,UTAH.

SURVEY LISTING Page 6  
 Your ref : MWD Sidetrack #1  
 Last revised : 1-May-97

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100ft	Vert Sect	
2980.00	0.90	196.00	2978.91	3.64 S	61.49 W	0.51	55.41	
3000.00	0.90	196.00	2998.91	3.94 S	61.57 W	0.00	55.38	3,000 M.D.
3020.00	0.80	201.00	3018.91	4.22 S	61.67 W	0.62	55.36	
3040.00	0.80	203.00	3038.91	4.48 S	61.77 W	0.14	55.35	
3060.00	0.70	202.00	3058.91	4.72 S	61.87 W	0.50	55.35	
3080.00	0.70	201.00	3078.90	4.95 S	61.96 W	0.06	55.35	
3100.00	0.90	196.00	3098.90	5.22 S	62.05 W	1.06	55.33	
3120.00	1.70	189.00	3118.90	5.66 S	62.14 W	4.07	55.24	
3140.00	2.30	190.00	3138.88	6.35 S	62.25 W	3.00	55.09	
3160.00	2.60	189.00	3158.87	7.19 S	62.39 W	1.52	54.89	
3180.00	2.70	187.00	3178.85	8.11 S	62.52 W	0.68	54.66	
3200.00	3.00	181.00	3198.82	9.10 S	62.59 W	2.11	54.34	3,200 M.D.\
3220.00	3.10	179.00	3218.79	10.16 S	62.59 W	0.73	53.94	
3240.00	3.10	176.00	3238.76	11.24 S	62.54 W	0.81	53.48	
3260.00	3.20	174.00	3258.73	12.34 S	62.45 W	0.74	52.97	
3280.00	3.30	169.00	3278.70	13.46 S	62.28 W	1.50	52.39	
3300.00	3.40	166.00	3298.67	14.60 S	62.02 W	1.01	51.72	
3320.00	3.60	164.00	3318.63	15.78 S	61.71 W	1.17	50.97	
3340.00	4.00	163.00	3338.59	17.05 S	61.33 W	2.03	50.14	
3360.00	4.60	164.00	3358.53	18.49 S	60.91 W	3.02	49.20	
3380.00	5.00	163.00	3378.46	20.09 S	60.43 W	2.04	48.14	
3400.00	5.20	161.00	3398.38	21.78 S	59.88 W	1.34	46.99	3,400 M.D.
3420.00	5.50	159.00	3418.29	23.53 S	59.24 W	1.77	45.73	
3440.00	5.50	159.00	3438.20	25.32 S	58.55 W	0.00	44.41	
3460.00	5.50	159.00	3458.11	27.11 S	57.87 W	0.00	43.09	

All data is in feet unless otherwise stated.  
 Coordinates from SLOT #1 and TVD from rotary table.  
 Bottom hole distance is 907.50 on azimuth 233.51 degrees from wellhead.  
 Vertical section is from wellhead on azimuth 292.50 degrees.  
 Calculation uses the minimum curvature method.  
 Presented by Baker Hughes INTEQ

HARKEN ENERGY CORPORATION  
 SEC.31-T41S-R24E,MULE 31K-1  
 SAN JUAN COUNTY,UTAH.

SURVEY LISTING Page 7  
 Your ref : MWD Sidetrack #1  
 Last revised : 1-May-97

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100ft	Vert Sect
3480.00	5.60	160.00	3478.01	28.92 S	57.19 W	0.70	41.77
3500.00	5.70	162.00	3497.92	30.79 S	56.55 W	1.10	40.46
3520.00	5.80	164.00	3517.82	32.70 S	55.96 W	1.12	39.19
3540.00	5.70	165.00	3537.72	34.63 S	55.43 W	0.71	37.96
3560.00	6.00	163.00	3557.61	36.59 S	54.87 W	1.81	36.69
3580.00	6.40	160.00	3577.49	38.64 S	54.18 W	2.57	35.27
3600.00	7.10	158.00	3597.36	40.83 S	53.33 W	3.69	33.65 3,600 M.D.
3620.00	8.00	157.00	3617.18	43.26 S	52.33 W	4.55	31.79
3640.00	9.10	159.00	3636.96	46.02 S	51.22 W	5.70	29.71
3660.00	9.60	160.00	3656.69	49.06 S	50.08 W	2.63	27.49
3680.00	9.70	160.00	3676.41	52.21 S	48.93 W	0.50	25.23
3700.00	9.80	160.00	3696.12	55.39 S	47.77 W	0.50	22.94
3720.00	9.70	161.00	3715.83	58.59 S	46.64 W	0.98	20.67
3740.00	10.10	160.00	3735.54	61.83 S	45.50 W	2.18	18.37
3760.00	11.20	161.00	3755.19	65.31 S	44.26 W	5.58	15.90
3780.00	12.70	161.00	3774.76	69.23 S	42.92 W	7.50	13.16
3800.00	13.90	162.00	3794.22	73.59 S	41.46 W	6.11	10.14 3,800 M.D.
3820.00	14.50	163.00	3813.61	78.27 S	39.98 W	3.24	6.99
3840.00	14.80	163.00	3832.96	83.11 S	38.50 W	1.50	3.77
3860.00	15.00	163.00	3852.29	88.02 S	37.00 W	1.00	0.50
3880.00	15.80	163.00	3871.57	93.10 S	35.45 W	4.00	-2.88
3900.00	16.30	162.00	3890.79	98.38 S	33.78 W	2.86	-6.43
3920.00	16.30	161.00	3909.98	103.70 S	32.00 W	1.40	-10.12
3940.00	16.40	161.00	3929.18	109.02 S	30.17 W	0.50	-13.85
3960.00	16.40	161.00	3948.36	114.36 S	28.33 W	0.00	-17.59

All data is in feet unless otherwise stated.  
 Coordinates from SLOT #1 and TVD from rotary table.  
 Bottom hole distance is 907.50 on azimuth 233.51 degrees from wellhead.  
 Vertical section is from wellhead on azimuth 292.50 degrees.  
 Calculation uses the minimum curvature method.  
 Presented by Baker Hughes INTEQ

HARKEN ENERGY CORPORATION  
 SEC.31-T41S-R24E,MULE 31K-1  
 SAN JUAN COUNTY,UTAH.

SURVEY LISTING Page 8  
 Your ref : MWD Sidetrack #1  
 Last revised : 1-May-97

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100ft	Vert Sect	
3980.00	17.10	161.00	3967.51	119.81 S	26.46 W	3.50	-21.41	
4000.00	17.40	160.00	3986.61	125.40 S	24.48 W	2.11	-25.38	4,000 M.D.
4020.00	17.70	160.00	4005.68	131.07 S	22.41 W	1.50	-29.45	
4040.00	18.10	159.00	4024.71	136.83 S	20.26 W	2.52	-33.64	
4060.00	18.30	159.00	4043.71	142.66 S	18.02 W	1.00	-37.94	
4080.00	18.70	160.00	4062.68	148.60 S	15.80 W	2.55	-42.27	
4100.00	18.90	160.00	4081.61	154.66 S	13.59 W	1.00	-46.63	
4120.00	19.20	160.00	4100.52	160.79 S	11.36 W	1.50	-51.04	
4140.00	19.90	160.00	4119.37	167.08 S	9.07 W	3.50	-55.56	
4160.00	20.70	162.00	4138.12	173.64 S	6.82 W	5.29	-60.15	
4180.00	21.90	164.00	4156.76	180.59 S	4.70 W	7.01	-64.77	
4200.00	22.90	165.00	4175.25	187.93 S	2.66 W	5.35	-69.46	4,200 M.D.
4220.00	23.50	164.00	4193.63	195.53 S	0.55 W	3.59	-74.31	
4240.00	24.10	164.00	4211.93	203.28 S	1.67 E	3.00	-79.34	
4260.00	24.10	164.00	4230.19	211.14 S	3.92 E	0.00	-84.42	
4280.00	24.40	163.00	4248.42	219.01 S	6.25 E	2.54	-89.59	
4300.00	24.50	163.00	4266.63	226.93 S	8.68 E	0.50	-94.86	
4320.00	24.90	163.00	4284.80	234.92 S	11.12 E	2.00	-100.17	
4340.00	25.20	163.00	4302.92	243.02 S	13.59 E	1.50	-105.56	
4360.00	25.70	162.00	4320.98	251.21 S	16.18 E	3.30	-111.08	
4380.00	26.10	162.00	4338.97	259.52 S	18.88 E	2.00	-116.76	
4400.00	26.30	162.00	4356.91	267.92 S	21.61 E	1.00	-122.49	4,400 M.D.
4420.00	26.60	162.00	4374.82	276.39 S	24.36 E	1.50	-128.28	
4440.00	26.90	163.00	4392.68	284.98 S	27.07 E	2.70	-134.06	
4460.00	27.20	163.00	4410.49	293.68 S	29.73 E	1.50	-139.85	

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 Coordinates from SLOT #1 and TVD from rotary table.  
 Bottom hole distance is 907.50 on azimuth 233.51 degrees from wellhead.  
 Vertical section is from wellhead on azimuth 292.50 degrees.  
 Calculation uses the minimum curvature method.  
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HARKEN ENERGY CORPORATION  
 SEC.31-T41S-R24E,MULE 31K-1  
 SAN JUAN COUNTY,UTAH.

SURVEY LISTING Page 9  
 Your ref : MWD Sidetrack #1  
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Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100ft	Vert Sect
4480.00	27.30	162.00	4428.27	302.41 S	32.48 E	2.34	-145.73
4500.00	27.80	162.00	4446.00	311.21 S	35.34 E	2.50	-151.74
4520.00	27.90	162.00	4463.69	320.09 S	38.23 E	0.50	-157.81
4540.00	28.10	161.00	4481.35	329.00 S	41.20 E	2.55	-163.97
4560.00	28.40	162.00	4498.96	337.97 S	44.21 E	2.80	-170.18
4580.00	29.10	163.00	4516.50	347.15 S	47.10 E	4.25	-176.36
4600.00	29.20	163.00	4533.96	356.46 S	49.95 E	0.50	-182.56 4,600 M.D.
4620.00	29.20	163.00	4551.42	365.79 S	52.80 E	0.00	-188.77
4640.00	29.20	163.00	4568.88	375.13 S	55.65 E	0.00	-194.97
4660.00	28.80	163.00	4586.37	384.40 S	58.49 E	2.00	-201.14
4680.00	28.50	163.00	4603.93	393.57 S	61.29 E	1.50	-207.24
4700.00	28.70	163.00	4621.48	402.72 S	64.09 E	1.00	-213.33
4720.00	29.00	163.00	4639.00	411.95 S	66.91 E	1.50	-219.47
4740.00	29.30	163.00	4656.47	421.27 S	69.76 E	1.50	-225.66
4760.00	29.20	163.00	4673.92	430.61 S	72.62 E	0.50	-231.88
4780.00	29.10	163.00	4691.39	439.93 S	75.47 E	0.50	-238.08
4800.00	28.80	162.00	4708.89	449.16 S	78.38 E	2.85	-244.30 4,800 M.D.
4820.00	28.40	160.00	4726.45	458.21 S	81.49 E	5.19	-250.64
4840.00	28.10	160.00	4744.07	467.11 S	84.73 E	1.50	-257.04
4860.00	27.80	159.00	4761.73	475.89 S	88.01 E	2.78	-263.43
4880.00	27.60	159.00	4779.44	484.57 S	91.34 E	1.00	-269.83
4900.00	27.20	159.00	4797.20	493.16 S	94.64 E	2.00	-276.16
4920.00	26.80	159.00	4815.02	501.64 S	97.90 E	2.00	-282.41
4940.00	26.50	159.00	4832.89	510.01 S	101.11 E	1.50	-288.59
4960.00	26.30	160.00	4850.81	518.34 S	104.23 E	2.44	-294.65

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 Coordinates from SLOT #1 and TVD from rotary table.  
 Bottom hole distance is 907.50 on azimuth 233.51 degrees from wellhead.  
 Vertical section is from wellhead on azimuth 292.50 degrees.  
 Calculation uses the minimum curvature method.  
 Presented by Baker Hughes INTEQ

HARKEN ENERGY CORPORATION  
 SEC.31-T41S-R24E,MULE 31K-1  
 SAN JUAN COUNTY,UTAH.

SURVEY LISTING Page 10  
 Your ref : MWD Sidetrack #1  
 Last revised : 1-May-97

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100ft	Vert Sect	
4980.00	26.20	159.00	4868.74	526.63 S	107.32 E	2.27	-300.69	
5000.00	26.60	159.00	4886.66	534.93 S	110.51 E	2.00	-306.81	5,000 M.D.
5020.00	27.10	159.00	4904.50	543.36 S	113.75 E	2.50	-313.03	
5040.00	27.30	159.00	4922.29	551.90 S	117.02 E	1.00	-319.32	
5060.00	27.00	159.00	4940.09	560.42 S	120.29 E	1.50	-325.60	
5080.00	26.70	159.00	4957.93	568.85 S	123.53 E	1.50	-331.82	
5100.00	26.80	160.00	4975.79	577.28 S	126.68 E	2.31	-337.96	
5120.00	27.40	161.00	4993.59	585.87 S	129.72 E	3.77	-344.05	
5140.00	28.20	162.00	5011.29	594.72 S	132.68 E	4.63	-350.17	
5160.00	28.60	163.00	5028.88	603.79 S	135.54 E	3.11	-356.29	
5180.00	28.90	164.00	5046.41	613.01 S	138.27 E	2.83	-362.34	
5200.00	28.80	164.00	5063.93	622.29 S	140.93 E	0.50	-368.35	5,200 M.D.
5220.00	28.60	165.00	5081.47	631.54 S	143.50 E	2.60	-374.26	
5240.00	28.70	166.00	5099.03	640.83 S	145.90 E	2.45	-380.03	
5260.00	29.40	166.00	5116.51	650.25 S	148.25 E	3.50	-385.81	
5280.00	30.00	165.00	5133.88	659.84 S	150.73 E	3.89	-391.77	
5300.00	30.40	164.00	5151.17	669.54 S	153.42 E	3.21	-397.96	
5320.00	30.40	163.00	5168.42	679.24 S	156.30 E	2.53	-404.33	
5340.00	30.30	163.00	5185.68	688.90 S	159.25 E	0.50	-410.76	
5360.00	30.30	161.00	5202.95	698.50 S	162.37 E	5.05	-417.31	
5380.00	30.90	157.00	5220.16	708.00 S	166.02 E	10.61	-424.32	
5400.00	31.30	156.00	5237.29	717.47 S	170.14 E	3.27	-431.75	5,400 M.D.
5420.00	31.40	155.00	5254.37	726.94 S	174.45 E	2.65	-439.36	
5440.00	31.20	155.00	5271.46	736.36 S	178.84 E	1.00	-447.02	
5460.00	31.00	155.00	5288.58	745.72 S	183.21 E	1.00	-454.64	

All data is in feet unless otherwise stated.  
 Coordinates from SLOT #1 and TVD from rotary table.  
 Bottom hole distance is 907.50 on azimuth 233.51 degrees from wellhead.  
 Vertical section is from wellhead on azimuth 292.50 degrees.  
 Calculation uses the minimum curvature method.  
 Presented by Baker Hughes INTEQ

HARKEN ENERGY CORPORATION  
 SEC.31-T41S-R24E,MULE 31K-1  
 SAN JUAN COUNTY,UTAH.

SURVEY LISTING Page 11  
 Your ref : MWD Sidetrack #1  
 Last revised : 1-May-97

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100ft	Vert Sect
5480.00	30.70	155.00	5305.75	755.02 S	187.54 E	1.50	-462.20
5500.00	30.50	155.00	5322.97	764.24 S	191.85 E	1.00	-469.71
5520.00	30.40	155.00	5340.21	773.43 S	196.13 E	0.50	-477.18
5540.00	30.60	155.00	5357.44	782.63 S	200.42 E	1.00	-484.66
5560.00	30.70	156.00	5374.65	791.91 S	204.65 E	2.60	-492.12
5580.00	30.50	156.00	5391.86	801.21 S	208.79 E	1.00	-499.50
5600.00	30.30	156.00	5409.11	810.45 S	212.91 E	1.00	-506.85 5,600 M.D.
5620.00	30.00	156.00	5426.41	819.63 S	216.99 E	1.50	-514.13
5640.00	30.10	156.00	5443.72	828.78 S	221.07 E	0.50	-521.40
5660.00	30.10	156.00	5461.02	837.94 S	225.14 E	0.00	-528.67
5680.00	30.20	156.00	5478.32	847.12 S	229.23 E	0.50	-535.96
5700.00	30.20	157.00	5495.60	856.34 S	233.24 E	2.52	-543.20
5720.00	30.50	158.00	5512.86	865.68 S	237.11 E	2.94	-550.34
5740.00	30.60	159.00	5530.08	875.14 S	240.83 E	2.59	-557.40
5760.00	30.70	160.00	5547.29	884.69 S	244.40 E	2.60	-564.36
5780.00	30.70	160.00	5564.49	894.28 S	247.90 E	0.00	-571.25
5800.00	30.70	160.00	5581.68	903.88 S	251.39 E	0.00	-578.15 5,800 M.D.
5820.00	30.60	160.00	5598.89	913.46 S	254.88 E	0.50	-585.04
5840.00	30.50	160.00	5616.11	923.01 S	258.35 E	0.50	-591.91
5850.00	30.45	160.00	5624.73	927.78 S	260.09 E	0.50	-595.33
5885.00	19.90	196.70	5656.55	941.94 S	261.42 E	52.56	-601.99
5895.00	19.80	222.30	5665.97	944.83 S	259.79 E	86.29	-601.58
5900.00	19.40	230.90	5670.68	945.98 S	258.57 E	58.20	-600.90
5905.00	19.40	240.10	5675.40	946.92 S	257.21 E	61.06	-600.00
5915.00	20.70	254.40	5684.80	948.22 S	254.07 E	50.59	-597.59

All data is in feet unless otherwise stated.  
 Coordinates from SLOT #1 and TVD from rotary table.  
 Bottom hole distance is 907.50 on azimuth 233.51 degrees from wellhead.  
 Vertical section is from wellhead on azimuth 292.50 degrees.  
 Calculation uses the minimum curvature method.  
 Presented by Baker Hughes INTEQ

HARKEN ENERGY CORPORATION  
 SEC. 31-T41S-R24E, MULE 31K-1  
 SAN JUAN COUNTY, UTAH.

SURVEY LISTING Page 12  
 Your ref : MWD Sidetrack #1  
 Last revised : 1-May-97

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100ft	Vert Sect	
5925.00	23.60	259.70	5694.06	949.05 S	250.39 E	35.19	-594.52	
5930.00	25.20	259.80	5698.61	949.42 S	248.36 E	32.01	-592.78	
5940.00	28.10	263.10	5707.55	950.08 S	243.93 E	32.55	-588.94	
5945.00	29.20	265.60	5711.94	950.32 S	241.54 E	32.53	-586.82	Tie to MWD Survey
5962.00	27.50	277.40	5726.91	950.13 S	233.51 E	34.39	-579.33	
5972.00	27.70	284.40	5735.78	949.25 S	228.97 E	32.48	-574.80	
5981.00	30.40	289.30	5743.64	947.98 S	224.79 E	39.96	-570.45	
5992.00	35.00	292.00	5752.90	945.88 S	219.23 E	43.86	-564.52	
6000.00	38.68	292.57	5759.30	944.06 S	214.80 E	46.19	-559.72	6,000 M.D.
6002.00	39.60	292.70	5760.85	943.57 S	213.63 E	46.19	-558.46	
6012.00	43.80	293.30	5768.32	940.97 S	207.51 E	42.19	-551.81	
6022.00	48.00	293.60	5775.27	938.11 S	200.92 E	42.06	-544.63	
6032.00	52.30	293.70	5781.68	935.03 S	193.89 E	43.01	-536.96	
6042.00	56.80	294.00	5787.48	931.74 S	186.44 E	45.07	-528.81	
6052.00	61.10	295.00	5792.64	928.19 S	178.65 E	43.84	-520.25	
6062.00	65.90	295.70	5797.10	924.36 S	170.57 E	48.41	-511.32	
6072.00	70.60	296.10	5800.80	920.30 S	162.21 E	47.15	-502.05	
6082.00	75.50	296.50	5803.72	916.06 S	153.64 E	49.15	-492.51	
6094.00	81.30	296.40	5806.13	910.83 S	143.12 E	48.34	-480.79	
6104.00	85.00	296.40	5807.32	906.41 S	134.23 E	37.00	-470.88	
6109.00	85.70	296.20	5807.73	904.21 S	129.76 E	14.56	-465.91	
6114.00	85.50	296.10	5808.11	902.01 S	125.29 E	4.47	-460.93	
6145.00	85.30	295.20	5810.59	888.63 S	97.43 E	2.96	-430.08	
6176.00	89.00	295.00	5812.14	875.50 S	69.40 E	11.95	-399.16	
6200.00	92.72	295.31	5811.78	865.30 S	47.68 E	15.54	-375.19	6,200 M.D.

All data is in feet unless otherwise stated.  
 Coordinates from SLOT #1 and TVD from rotary table.  
 Bottom hole distance is 907.50 on azimuth 233.51 degrees from wellhead.  
 Vertical section is from wellhead on azimuth 292.50 degrees.  
 Calculation uses the minimum curvature method.  
 Presented by Baker Hughes INTEQ

HARKEN ENERGY CORPORATION  
 SEC.31-T41S-R24E,MULE 31K-1  
 SAN JUAN COUNTY,UTAH.

SURVEY LISTING Page 13  
 Your ref : MWD Sidetrack #1  
 Last revised : 1-May-97

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100ft	Vert Sect	
6207.00	93.80	295.40	5811.38	862.31 S	41.37 E	15.54	-368.21	
6238.00	94.80	294.60	5809.05	849.25 S	13.35 E	4.13	-337.33	
6268.00	92.90	294.70	5807.04	836.76 S	13.85 W	6.34	-307.42	
6300.00	93.20	294.00	5805.34	823.59 S	42.97 W	2.38	-275.48	
6331.00	94.00	293.80	5803.39	811.05 S	71.25 W	2.66	-244.55	
6363.00	92.20	293.00	5801.66	798.36 S	100.57 W	6.15	-212.60	
6394.00	93.40	292.20	5800.15	786.46 S	129.16 W	4.65	-181.64	
6400.00	93.15	292.20	5799.80	784.20 S	134.71 W	4.19	-175.65	6,400 M.D.
6425.00	92.10	292.20	5798.66	774.77 S	157.83 W	4.19	-150.68	
6455.00	89.20	292.10	5798.32	763.46 S	185.61 W	9.67	-120.68	
6485.00	89.20	291.80	5798.74	752.24 S	213.43 W	1.00	-90.69	
6516.00	92.10	293.80	5798.39	740.23 S	242.00 W	11.36	-59.69	
6547.00	94.40	293.50	5796.63	727.82 S	270.35 W	7.48	-28.75	
6578.00	93.80	293.30	5794.41	715.54 S	298.73 W	2.04	2.16	
6600.00	92.81	293.02	5793.14	706.90 S	318.92 W	4.70	24.13	6,600 M.D.
6609.00	92.40	292.90	5792.74	703.39 S	327.20 W	4.70	33.12	
6639.00	91.60	292.30	5791.69	691.87 S	354.88 W	3.33	63.10	
6670.00	90.30	291.40	5791.17	680.34 S	383.65 W	5.10	94.09	
6701.00	88.40	290.60	5791.53	669.23 S	412.59 W	6.65	125.08	
6732.00	87.90	290.10	5792.53	658.45 S	441.64 W	2.28	156.04	
6764.00	88.70	289.80	5793.48	647.54 S	471.70 W	2.67	187.99	
6795.00	88.00	290.90	5794.37	636.77 S	500.75 W	4.20	218.96	
6800.00	88.12	291.03	5794.54	634.98 S	505.42 W	3.53	223.95	6,800 M.D.
6827.00	88.80	291.70	5795.26	625.15 S	530.56 W	3.53	250.94	
6858.00	87.40	291.90	5796.29	613.64 S	559.32 W	4.56	281.92	

All data is in feet unless otherwise stated.  
 Coordinates from SLOT #1 and TVD from rotary table.  
 Bottom hole distance is 907.50 on azimuth 233.51 degrees from wellhead.  
 Vertical section is from wellhead on azimuth 292.50 degrees.  
 Calculation uses the minimum curvature method.  
 Presented by Baker Hughes INTEQ

HARKEN ENERGY CORPORATION  
 SEC.31-T41S-R24E,MULE 31K-1  
 SAN JUAN COUNTY,UTAH.

SURVEY LISTING Page 14  
 Your ref : MWD Sidetrack #1  
 Last revised : 1-May-97

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100ft	Vert Sect
6890.00	85.70	292.30	5798.22	601.62 S	588.92 W	5.46	313.86
6921.00	85.70	292.30	5800.54	589.89 S	617.52 W	0.00	344.77
6950.00	86.40	294.40	5802.54	578.43 S	644.08 W	7.62	373.70
6981.00	87.60	293.90	5804.16	565.76 S	672.33 W	4.19	404.64
7000.00	87.66	294.39	5804.95	558.00 S	689.65 W	2.60	423.62 7,000 M.D.
7012.00	87.70	294.70	5805.43	553.02 S	700.55 W	2.60	435.60
7044.00	87.80	294.70	5806.69	539.65 S	729.60 W	0.31	467.55 Projection to Bit

All data is in feet unless otherwise stated.  
 Coordinates from SLOT #1 and TVD from rotary table.  
 Bottom hole distance is 907.50 on azimuth 233.51 degrees from wellhead.  
 Vertical section is from wellhead on azimuth 292.50 degrees.  
 Calculation uses the minimum curvature method.  
 Presented by Baker Hughes INTEQ

HARKEN ENERGY CORPORATION  
 SEC.31-T41S-R24E,MULE 31K-1  
 SAN JUAN COUNTY,UTAH.

SURVEY LISTING Page 15  
 Your ref : MWD Sidetrack #1  
 Last revised : 1-May-97

MD	TVD	Rectangular Coords.		Comments in wellpath
				Comment
3000.00	2998.91	3.94 S	61.57 W	3,000 M.D.
3200.00	3198.82	9.10 S	62.59 W	3,200 M.D.\
3400.00	3398.38	21.78 S	59.88 W	3,400 M.D.
3600.00	3597.36	40.83 S	53.33 W	3,600 M.D.
3800.00	3794.22	73.59 S	41.46 W	3,800 M.D.
4000.00	3986.61	125.40 S	24.48 W	4,000 M.D.
4200.00	4175.25	187.93 S	2.66 W	4,200 M.D.
4400.00	4356.91	267.92 S	21.61 E	4,400 M.D.
4600.00	4533.96	356.46 S	49.95 E	4,600 M.D.
4800.00	4708.89	449.16 S	78.38 E	4,800 M.D.
5000.00	4886.66	534.93 S	110.51 E	5,000 M.D.
5200.00	5063.93	622.29 S	140.93 E	5,200 M.D.
5400.00	5237.29	717.47 S	170.14 E	5,400 M.D.
5600.00	5409.11	810.45 S	212.91 E	5,600 M.D.
5800.00	5581.68	903.88 S	251.39 E	5,800 M.D.
5945.00	5711.94	950.32 S	241.54 E	Tie to MWD Survey
6000.00	5759.30	944.06 S	214.80 E	6,000 M.D.
6200.00	5811.78	865.30 S	47.68 E	6,200 M.D.
6400.00	5799.80	784.20 S	134.71 W	6,400 M.D.
6600.00	5793.14	706.90 S	318.92 W	6,600 M.D.
6800.00	5794.54	634.98 S	505.42 W	6,800 M.D.
7000.00	5804.95	558.00 S	689.65 W	7,000 M.D.
7044.00	5806.69	539.65 S	729.60 W	Projection to Bit

NO Targets associated with this wellpath

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

**RECEIVED**  
JUL 25 1997  
DIV. OF OIL, GAS & MINING

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

**SUNDRY NOTICES AND REPORTS ON WELLS**

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

5. Lease Designation and Serial No.  
NOG 8707-1231

6. If Indian, Allottee or Tribe Name  
Navajo

SUBMIT IN TRIPLICATE

**CONFIDENTIAL**

1. Type of Well  
 Oil Well  Gas Well  Other

2. Name of Operator

Harken Southwest Corporation

3. Address and Telephone No.

P.O. Box 612007, Dallas, TX 75261-2007 (972) 753-6900

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Section 31-41S-24E  
Surface: 1650' FSL & 2030' FWL

7. If Unit or CA, Agreement Designation  
N/A

8. Well Name and No.  
Mule 31K (N)

9. API Well No.  
43-037-31617

10. Field and Pool, or Exploratory Area

11. County or Parish, State  
San Juan, Utah

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back
	<input type="checkbox"/> Casing Repair
	<input type="checkbox"/> Altering Casing
	<input checked="" type="checkbox"/> Other <u>Completion Attempt</u>
	<input type="checkbox"/> Change of Plans
	<input type="checkbox"/> New Construction
	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

After additional evaluation of records it was determined that the loss of drilling fluid was greater than originally calculated. Therefore, additional swabbing operation were undertaken for 4 days. The average initial swab rate was 15.6 BPH. Total swabbed volume was 540.1 bbls of total fluid with a 40% oil cut.

Harken Southwest is currently evaluating proper equipment design for lift and separation of fluids. Design and cost analysis are ongoing for specialized rod string, pumping unit and surface facilities.

The current well status is **shut-in**.

CC: State of Utah  
Navajo Nation  
BIA - Gallup, NM

**CONFIDENTIAL**

14. I hereby certify that the foregoing is true and correct

Signed: [Signature] Title: Production Administrator Date: 07/21/97  
(This space for Federal or State office use)

Approved by: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_  
Conditions of approval, if any:

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

**SUNDRY NOTICES AND REPORTS ON WELLS**

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

5. Lease Designation and Serial No.

NOG 8707-1231

6. If Indian, Allottee or Tribe Name

Navajo

7. If Unit or CA, Agreement Designation

N/A

8. Well Name and No.

Mule 31K (N)

9. API Well No.

43-037-31617

10. Field and Pool, or Exploratory Area

11. County or Parish, State

San Juan, Utah

**SUBMIT IN TRIPLICATE**

1. Type of Well

Oil Well  Gas Well  Other Shut-In

2. Name of Operator

Harken Southwest Corporation

3. Address and Telephone No.

P.O. Box 612007 Dallas, Texas 75261-2007 (972) 753-6900

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

NE/SW Section 31-41S-24E  
1650' FSL & 2030' FWL (Surface)

**CONFIDENTIAL**

12. CHECK APPROPRIATE BOX(S) TO INDICATE TYPE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

Notice of Intent  
 Subsequent Report  
 Final Abandonment Notice

**CONFIDENTIAL**

TYPE OF ACTION

Abandonment  
 Recompletion  
 Plugging Back  
 Casing Repair  
 Altering Casing  
 Other Status  
 Change of Plans  
 New Construction  
 Non-Routine Fracturing  
 Water Shut-Off  
 Conversion to Injection  
 Dispose Water

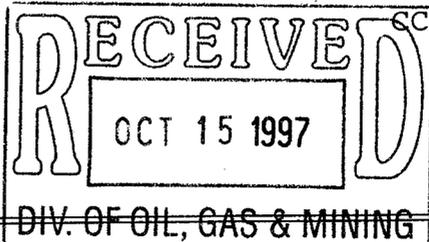
(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Harken Southwest Corporation has ordered the necessary completion equipment to place the subject well on production.

However, circumstances did not permit placing the well on production prior to the October 1 expiration of shut-in approval. Therefore, Harken Southwest Corporation respectfully requests an extension of shut-in approval to December 15, 1997.

This will allow time to compensate for the current rig availability problems and any winter weather which could delay installation work.



State of Utah  
Navajo Nation-Minerals  
BIA

14. I hereby certify that the foregoing is true and correct

Signed

*[Handwritten Signature]*

Title

Production Administrator

Date

10/13/97

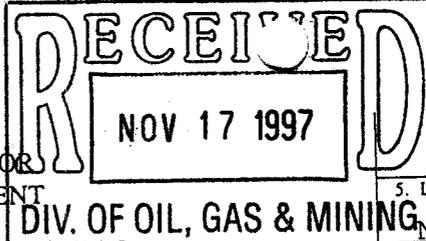
Approved by

Conditions of approval, if any:

Title

Date

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT



FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

**SUNDRY NOTICES AND REPORTS ON WELLS**

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

5. Lease Designation and Serial No.

NOG 8707-1231

6. If Indian, Allottee or Tribe Name

Navajo

7. If Unit or CA, Agreement Designation

N/A

8. Well Name and No.

Mule 31K (N)

9. API Well No.

43-037-31617

10. Field and Pool, or Exploratory Area

11. County or Parish, State

San Juan, Utah

**SUBMIT IN TRIPLICATE**

1. Type of Well

Oil Well  Gas Well  Other Shut-In

2. Name of Operator

Harken Southwest Corporation

3. Address and Telephone No.

P.O. Box 612007 Dallas, Texas 75261-2007 (972) 753-6900

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

NE/SW Section 31-41S-24E  
1650' FSL & 2030' FWL (Surface)

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back
	<input type="checkbox"/> Casing Repair
	<input type="checkbox"/> Altering Casing
	<input checked="" type="checkbox"/> Other <u>Status</u>
	<input type="checkbox"/> Change of Plans
	<input type="checkbox"/> New Construction
	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

This Sundry Notice is filed as confirmation of verbal approval for Harken Southwest to vent up to a maximum of 100 MCF/D from November 11 - 17, 1997.

This venting request is submitted in case operations require venting during the connection of production facilities and gas sales line.

CC: State of Utah ✓  
BIA - Gallup, NM  
Navajo Nation - Minerals Department

14. I hereby certify that the foregoing is true and correct

Signed

*Rachelle Montgomery*

Production Administrator

Date

11/12/97

(This space for Federal or State office use)

Approved by

Title

Date

Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

\*See Instruction on Reverse Side

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED  
DEC 01 1997  
DIV. OF OIL, GAS & MINING

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993  
Registration and Serial No.

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

NOG 8707-1231

6. If Indian, Allottee or Tribe Name

Navajo

7. If Unit or CA, Agreement Designation

N/A

8. Well Name and No.

Mule 31K (N)

9. API Well No.

43-037-31617

10. Field and Pool, or Exploratory Area

11. County or Parish, State

San Juan, Utah

1. Type of Well  
 Oil Well  Gas Well  Other

2. Name of Operator  
Harken Southwest Corporation

3. Address and Telephone No.  
P.O. Box 612007 Dallas, Texas 75261-2007 (972) 753-6900

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
NE/SW Section 31-41S-24E  
1650' FSL & 2030' FWL (Surface)

CONFIDENTIAL

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- Notice of Intent
- Subsequent Report
- Final Abandonment Notice

TYPE OF ACTION

- Abandonment
- Recompletion
- Plugging Back
- Casing Repair
- Altering Casing
- Other Production
- Change of Plans
- New Construction
- Non-Routine Fracturing
- Water Shut-Off
- Conversion to Injection
- Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Please be advised the subject well was connected to the gas sales line on November 13, 1997. The oil is being produced to tanks.

The total volume of gas vented during the installation of facilities was 70 MCF.

cc: State of Utah  
Navajo Nation - Minerals Department  
BIA

14. I hereby certify that the foregoing is true and correct.  
Signed Rachelle Montgomery Title Production Administrator Date 11/20/97

(This space for Federal or State office use)

Approved by \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_  
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statement or representations as to any matter within its jurisdiction.

**UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT**

SUBMIT IN DUPLICATE\*  
(See other instructions on reverse side)

FORM APPROVED  
OMB NO. 1004-0137  
Expires: February 28, 1995

**WELL COMPLETION OR RECOMPLETION REPORT AND LOG \***

1a. TYPE OF WELL: OIL WELL  GAS WELL  DRY  Other \_\_\_\_\_

b. TYPE OF COMPLETION: NEW WELL  WORK OVER  DEEP-EN  PLUG BACK  DIFF. RESVR.  Other \_\_\_\_\_

2. NAME OF OPERATOR  
Harken Southwest Corporation

3. ADDRESS AND TELEPHONE NO.  
P.O. Box 612007 Dallas, Texas 75261 (972) 753-6900

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)\*  
At surface 1650' FSL & 2030' FWL  
At top prod. interval reported below  
At total depth 1110' FSL & 1300' FWL

**CONFIDENTIAL**

14. PERMIT NO. Re-entry DATE ISSUED 1-27-97

15. DATE SPUNDED 03/08/97 16. DATE T.D. REACHED 03/27/97 17. DATE COMPL. (Ready to prod.) 11/13/97 18. ELEVATIONS (DF, RKB, RT, GB, ETC.)\* 19. ELEV. CASINGHEAD

20. TOTAL DEPTH, MD & TVD 7044' MD/5807' TVD 21. PLUG, BACK T.D., MD & TVD 22. IF MULTIPLE COMPL., HOW MANY\* 23. INTERVALS DRILLED BY Rotary 24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)\* Desert Creek 5885-7044 MD; 5656-5807 TVD (open hole completion) 25. WAS DIRECTIONAL SURVEY MADE yes

26. TYPE ELECTRIC AND OTHER LOGS RUN None this completion 27. WAS WELL CORRED no

**CASING RECORD (Report all strings set in well)**

CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	TOP OF CEMENT, CEMENTING RECORD	AMOUNT PULLED
8 5/8" K-55	23#	520' MD	Both csg strings were set during original completion attempt (1991)		0
5 1/2" K-55	15.5#	6185' MD	*3/97 milled window in 5 1/2" csg string from 5831-75'; CIBP @ 5950' w/35" sx CL "G"		

**LINER RECORD**

SIZE	TOP (MD)	BOTTOM (MD)	BACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
					2 7/8"	5866' MD	None

31. PERFORATION RECORD (Interval, size and number)	32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.
None	DEPTH INTERVAL (MD) AMOUNT AND KIND OF MATERIAL USED
	6960-6900' 1000 gal 15% HCL
	6900-6700' 1000 gal 15% HCL
	6700-6550' 2000 gal 15% HCL
	*** See Reverse***

**RECEIVED**  
DEC 16 1997  
DIV. OF OIL, GAS & MINING  
**CONFIDENTIAL**

**PRODUCTION**

33.\* DATE FIRST PRODUCTION 11/13/97 PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) Pumping WELL STATUS (Producing or shut-in) Producing

DATE OF TEST 11/29/97 HOURS TESTED 24 CHOKER SIZE PRODN. FOR TEST PERIOD OIL—BBL. 65 GAS—MCF. 47 WATER—BBL. 36 GAS-OIL RATIO 721.6

FLOW. TUBING PRESS. 32 psi CASING PRESSURE 39 psi CALCULATED 24-HOUR RATE OIL—BBL. 65 GAS—MCF. 47 WATER—BBL. 36 OIL GRAVITY-API (CORR.) 38.0 est.

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) Sold TEST WITNESSED BY Steve Mansur

35. LIST OF ATTACHMENTS Well profile data & survey previously submitted (6/97)

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records  
SIGNED Rachelle Montgomery TITLE Production Administrator DATE 12/10/97

\*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

NO tax credit 7/98

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries):

38. GEOLOGIC MARKERS

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.	NAME	TOP	
					MEAS. DEPTH	TRUE VERT. DEPTH
			No cores or DST run	re-entry; see attempt	original	completion

CONFIDENTIAL

CONFIDENTIAL

\*\* Acid Treatment Continued

6550-6430' MD w/3000 gal 15% HCL  
 6100-5980' MD w/2000 gal 15% HCL

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

**SUNDRY NOTICES AND REPORTS ON WELLS**

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

**SUBMIT IN TRIPLICATE**

1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other	5. Lease Designation and Serial No. <b>NOG 8707-1231</b>
2. Name of Operator <b>Harken Southwest Corporation</b>	6. If Indian, Allottee or Tribe Name <b>Navajo</b>
3. Address and Telephone No. <b>P.O. Box 612007 Dallas, Texas 75261-2007 (972)753-6900</b>	7. If Unit or CA, Agreement Designation
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) <b>Sec 31-41S-24E Surface: 1650' FSL &amp; 2030' FWL</b>	8. Well Name and No. <b>Mule 31K (N)</b>
	9. API Well No. <b>43-037-31617</b>
	10. Field and Pool, or Exploratory Area
	11. County or Parish, State <b>San Juan, Utah</b>

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

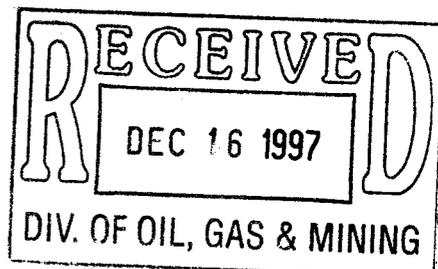
TYPE OF SUBMISSION	TYPE OF ACTION
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back
	<input type="checkbox"/> Casing Repair
	<input type="checkbox"/> Altering Casing
	<input checked="" type="checkbox"/> Other <b>Site Security Diagram</b>
	<input type="checkbox"/> Change of Plans
	<input type="checkbox"/> New Construction
	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Attached, please find the site security diagram for the above referenced production facility.

CC: State of Utah ✓  
Navajo Nation  
BIA - Gallup, NM



14. I hereby certify that the foregoing is true and correct

Signed *[Signature]* Title Production Administrator Date 12/10/97

(This space for Federal or State office use)

Approved by \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_

Conditions of approval, if any:

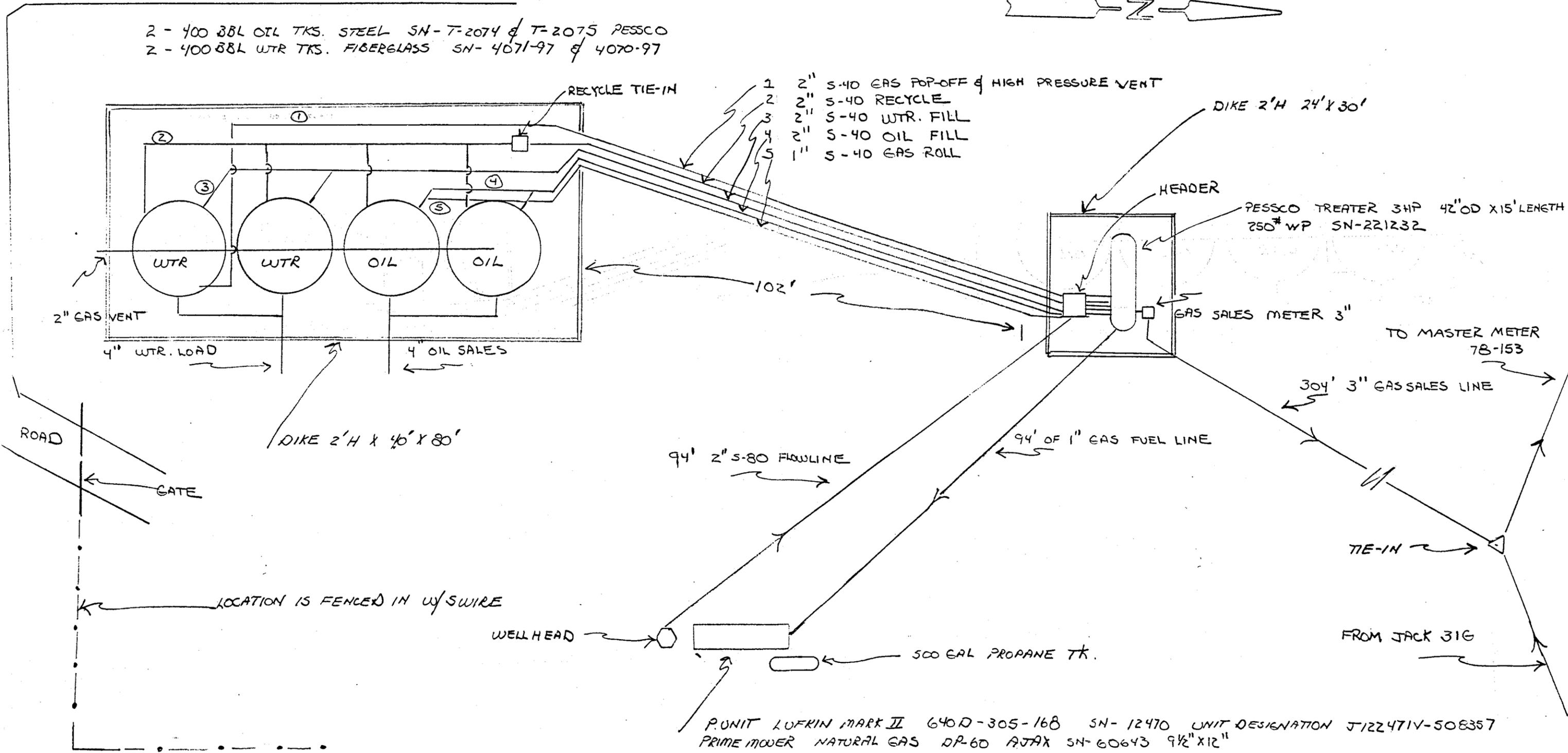
HARKEN SOUTHWEST CORP.  
 MULE 31K (N)  
 NE/SW SECTION 31-41S-24E  
 COUNTY - SAN JUAN, UTAH  
 NOG 8707-1231  
 API 43-037-31617

DATE 12-5-97

AM

HIGHWAY 35 TO MONTEZUMA CR.

2 - 400 BBL OIL TKS. STEEL SN-T-2074 & T-2075 PESSCO  
 2 - 400 BBL WTR TKS. FIBERGLASS SN-4071-97 & 4070-97



- 1 2" S-40 GAS POP-OFF & HIGH PRESSURE VENT
- 2 2" S-40 RECYCLE
- 3 2" S-40 WTR. FILL
- 4 2" S-40 OIL FILL
- 5 1" S-40 GAS ROLL

DIKE 2'H 24'X30'

PESSCO TREATER 3HP 42"OD X15' LENGTH  
 250# WP SN-221232

GAS SALES METER 3"

TO MASTER METER 78-153

304' 3" GAS SALES LINE

94' OF 1" GAS FUEL LINE

94' 2" S-80 FLOWLINE

500 GAL PROPANE TK.

P. UNIT LUFRIN MARK II 640D-305-168 SN-12470 UNIT DESIGNATION J122471V-508357  
 PRIME MOVER NATURAL GAS DP-60 AJAX SN-60643 9 1/2" X 12"

LOCATION IS FENCED IN W/ SWIRE

DIKE 2'H X 40' X 80'

GATE

ROAD

WELL HEAD

FROM JACK 316

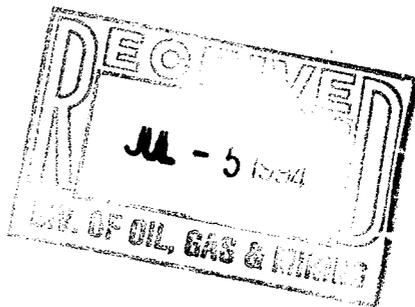
TIE-IN



# HARKEN SOUTHWEST CORPORATION

(formerly Chuska Energy Company)

June 30, 1994



Mr. Mike Hebertson  
State of Utah  
Division of Oil, Gas & Mining  
3 Triad Center, Suite 350  
Salt Lake City, UT 85180

Dear Mike:

Pursuant to your request enclosed are the Directional Surveys for the following wells:

<del>X</del> Mule 31K 43-037-31617	Sec 31 T415 R24E
N. Cajon Mesa 5E#1 43-037-31624	Sec 5 T40S R25E
N.W. Cajon Mesa 6E 43-037-31627	Sec 6 T40S R25E
D.C. Anticline 35K 43-037-31726	Sec 35 T415 R23E
Lark 19B 43-037-31731	Sec 19 T425 R24E

Should you need additional information please let me know.

Very truly yours,

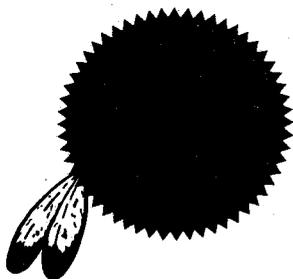
HARKEN SOUTHWEST CORPORATION

*Rachelle Montgomery*  
 Rachelle Montgomery  
 Production Administrator

RM/jkw

Enclosure

*Vicky,*  
 From info. given can only  
 confirm one Btm Hole  
 location. However all  
 wells are directional.  
 7/8/94  
*Frank*

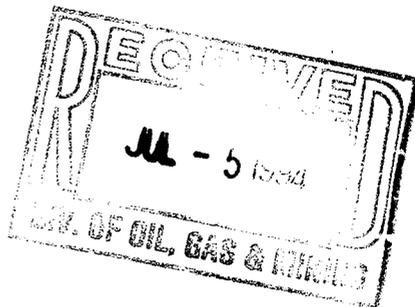


# HARKEN SOUTHWEST CORPORATION

(formerly Chuska Energy Company)

June 30, 1994

Mr. Mike Hebertson  
State of Utah  
Division of Oil, Gas & Mining  
3 Triad Center, Suite 350  
Salt Lake City, UT 85180



Dear Mike:

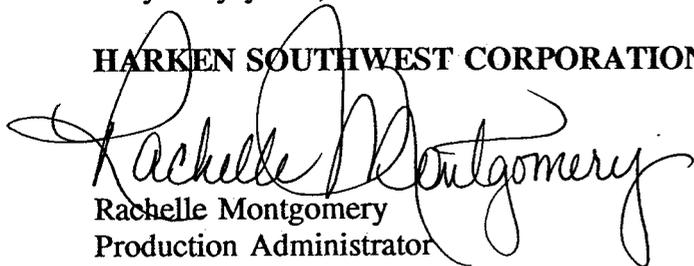
Pursuant to your request enclosed are the Directional Surveys for the following wells:

X Mule 31K 43-037-31617	Sec 31 T41S R24E
N. Cajon Mesa 5E#1 43-037-31624	Sec 5 T40S R25E
N.W. Cajon Mesa 6E 43-037-31627	Sec 6 T40S R25E
D.C. Anticline 35K 43-037-31726	Sec 35 T41S R23E
Lark 19B 43-037-31731	Sec 19 T42S R24E

Should you need additional information please let me know.

Very truly yours,

HARKEN SOUTHWEST CORPORATION

  
Rachelle Montgomery  
Production Administrator

RM/jkw

Enclosure

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

**SUNDRY NOTICES AND REPORTS ON WELLS**

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

5. Lease Designation and Serial No.

NOG 8707 1231

6. If Indian, Allottee or Tribe Name

Navajo

7. If Unit or CA, Agreement Designation

8. Well Name and No.

Mule 31K(N)

9. API Well No.

43-037-31617 ✓

10. Field and Pool, or Exploratory Area

11. County or Parish, State

San Juan County, UT

**SUBMIT IN TRIPLICATE**

1. Type of Well

Oil Well  Gas Well  Other

2. Name of Operator

HARKEN SOUTHWEST CORPORATION

3. Address and Telephone No.

P. O. Drawer 612007, Dallas, TX 75261 817/695-4900

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

692' FSL & 2296' FWL ( NE/SW )  
Section 31-41S-24E

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- Notice of Intent  
 Subsequent Report  
 Final Abandonment Notice

TYPE OF ACTION

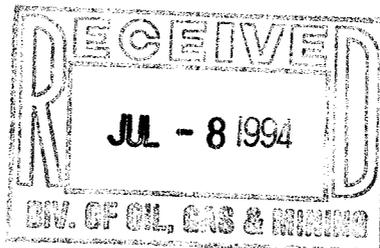
- Abandonment  
 Recompletion  
 Plugging Back  
 Casing Repair  
 Altering Casing  
 Other \_\_\_\_\_ Status \_\_\_\_\_
- Change of Plans  
 New Construction  
 Non-Routine Fracturing  
 Water Shut-Off  
 Conversion to Injection  
 Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Harken Southwest is in the final stages of negotiations with the Department of Energy (DOE) to perform enhanced recovery in our fields located in SW Utah.

Results of the study will be applied to our Mule field and therefore, we plan to potentially utilized the Mule 31K(N) as a producer or an injector for CO<sub>2</sub> or H<sub>2</sub>O.



I hereby certify that the foregoing is true and correct

Signed

(This space for Federal or State office use)

Approved by \_\_\_\_\_  
Conditions of approval, if any:

Title Production Administrator

Date 7/5/94

Title \_\_\_\_\_

Date \_\_\_\_\_

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

43-037-31617

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

**SUNDRY NOTICES AND REPORTS ON WELLS**

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

**SUBMIT IN TRIPLICATE**

1. Type of Well  
 Oil Well    Gas Well    Other

2. Name of Operator  
**Harken Southwest Corporation**

3. Address and Telephone No.  
**P.O. Box 612007 Dallas, Texas 75261-2007 (972) 753-6900**

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
**40,41 & 42S - 23,24 & 25S  
 Various Sections**

5. Lease Designation and Serial No.

6. If Indian, Allottee or Tribe Name  
**Navajo Nation**

7. If Unit or CA, Agreement Designation

8. Well Name and No.  
**See attached**

9. API Well No.  
**See attached**

10. Field and Pool, or Exploratory Area

11. County or Parish, State  
**San Juan County, UT**

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

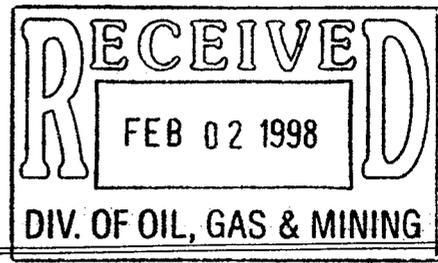
TYPE OF SUBMISSION	TYPE OF ACTION
<input type="checkbox"/> Notice of Intent <input checked="" type="checkbox"/> Subsequent Report <input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Abandonment <input type="checkbox"/> Recompletion <input type="checkbox"/> Plugging Back <input type="checkbox"/> Casing Repair <input type="checkbox"/> Altering Casing <input checked="" type="checkbox"/> Other <u>Gas venting</u>
	<input type="checkbox"/> Change of Plans <input type="checkbox"/> New Construction <input type="checkbox"/> Non-Routine Fracturing <input type="checkbox"/> Water Shut-Off <input type="checkbox"/> Conversion to Injection <input type="checkbox"/> Dispose Water <small>(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)</small>

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Attached please find the summary sheet for the gas vented by Harken Southwest during December, 1997 and January, 1998 due to the explosion and subsequent problems at the Aneth Gas Plant.

If additional information is required, please contact the undersigned at (972) 753-6900.

CC: State of Utah  
 Navajo Nation - Minerals Dept  
 BIA - Gallup, NM



14. I hereby certify that the foregoing is true and correct

Signed *Sachelle Montgomery* Title Production Administrator Date 01/29/98

(This space for Federal or State office use)

Approved by \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_  
 Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**IARKEN SOUTHWEST CORPORATION**  
**Gas Vented during Aneth Plant Shut-Down (12/97 & 1/98)**

Page 1 of 3

Anasazi #1 43-037-31478 SW/NW Sec 5-42S-24E	Anasazi 5L-3 43-037-31572 NW/SW Sec 5-42S-24E	Sahgzie 1 43-037-31472 SW/NW Sec 5-42S-24E	Anasazi 6H-1 43-037-31744 SE/NE Sec 6-42S-24E	Navajo Tribal 41-2 43-037-31041 NE/NE Sec 2-42S-24E	Navajo Tribal 23-13 43-037-30971 NE/SW Sec 13-40S-24E	Runway 10C-5A 43-037-31597 NE/NW Sec 10-40S-25E	Runway 10G-1 43-037-31515 SW/NE Sec 10-40S-25E
---	---	--	---	--	--	---	--

**Vented Gas (MCF) December 1997**

25-Dec	88	58	29	14		12	84	158
26-Dec	88	58	28	15		12	84	157
27-Dec	82	61	24	15		12	84	157
28-Dec	85	61	30	14		12	84	157
29-Dec	90	58	25	16	8	12	84	157
30-Dec	88	57	30	16		12	84	162
31-Dec	79	52	26	16		12	84	157
<b>Dec Total</b>	<b>600</b>	<b>405</b>	<b>192</b>	<b>106</b>	<b>8</b>	<b>84</b>	<b>588</b>	<b>1105</b>

**Vented Gas (MCF) January 1998**

1-Jan	79	57	29	16	7	12	84	162
2-Jan	89	57	30	15		12	84	162
3-Jan	87	52	30	16		12	84	162
4-Jan	86	50	29	16		12	84	162
5-Jan	107	47	29	16	7	12	84	162
6-Jan	76	75	28	21		10	84	162
7-Jan	84	72	29	22		11	84	157
8-Jan	79	75	30	22		9	84	157
9-Jan	77	70	29	21	11	12	84	147
10-Jan	0	0	0	0	0	2	0	136
11-Jan	0	0	0	0	0	0	0	0
12-Jan	0	0	0	0	0	0	0	0
13-Jan	0	0	0	0	0	0	0	0
14-Jan	0	0	0	0	0	0	0	0
15-Jan	0	0	0	0	0	0	0	0
16-Jan	0	0	0	0	0	0	0	0
17-Jan	0	0	0	0	0	0	0	0
18-Jan	81	67	28	22	0	0	0	0
19-Jan	81	67	28	22	0	5	99	0
20-Jan	80	64	30	21	0	2	12	0
<b>Jan Total</b>	<b>1006</b>	<b>753</b>	<b>349</b>	<b>230</b>	<b>25</b>	<b>111</b>	<b>867</b>	<b>1569</b>
<b>Grand Total</b>	<b>1606</b>	<b>1158</b>	<b>541</b>	<b>336</b>	<b>33</b>	<b>195</b>	<b>1455</b>	<b>2674</b>

**HARKEN SOUTHWEST CORPORATION**  
**Gas Vented during Aneth Plant Shut-Down (12/97 & 1/98)**

Page 2 of 3

<b>Runway 10E-2</b>	<b>Momentum 8N-2</b>	<b>Momentum 17E-2</b>	<b>Cajon Mesa 8D-1</b>	<b>Blue Hogan 1J-1</b>	<b>Brown Hogan 1A-2</b>
<b>43-037-31550</b>	<b>43-037-31509</b>	<b>43-037-31547</b>	<b>43-037-31497</b>	<b>43-037-31562</b>	<b>43-037-31573</b>
<b>SW/NW Sec 10-40S-25E</b>	<b>SE/SW Sec 8-40S-25E</b>	<b>SW/NW Sec 17-40S-25E</b>	<b>NW/NW Sec 8-40S-25E</b>	<b>NW/SE Sec 1-42S-23E</b>	<b>NE/NE Sec 1-42S-23E</b>

**Vented Gas (MCF) December 1997**

25-Dec	64	22		22	32	20
26-Dec	64	22	23	22	32	20
27-Dec	64	22		22	32	20
28-Dec	64	22		22	32	22
29-Dec	64	22	22	22	32	22
30-Dec	64	22		25	22	20
31-Dec	64	19		25	22	20
<b>Dec Total</b>	<b>448</b>	<b>151</b>	<b>45</b>	<b>160</b>	<b>204</b>	<b>144</b>

**Vented Gas (MCF) January 1998**

1-Jan	64	20	22	25	22	21
2-Jan	64	22		25	20	20
3-Jan	64	22		25	20	20
4-Jan	64	22		25	22	20
5-Jan	64	21	15	25	22	20
6-Jan	64	21		25	22	20
7-Jan	64	21		25	22	22
8-Jan	64	21		25	22	22
9-Jan	64	22	22	25	22	22
10-Jan	8	0	0	22	40	4
11-Jan	0	0	0	0	0	0
12-Jan	0	0	0	0	0	0
13-Jan	0	0	0	0	0	0
14-Jan	0	0	0	0	0	0
15-Jan	0	0	0	0	0	0
16-Jan	0	0	0	0	0	0
17-Jan	0	0	0	0	0	0
18-Jan	0	0	0	0	44	21
19-Jan	69	23	14	21	44	21
20-Jan	13	4		5	10	23
<b>Jan Total</b>	<b>666</b>	<b>219</b>	<b>73</b>	<b>273</b>	<b>332</b>	<b>256</b>
<b>Grand Total</b>	<b>1114</b>	<b>370</b>	<b>118</b>	<b>433</b>	<b>536</b>	<b>400</b>

**HARKEN SOUTHWEST CORPORATION**

**Gas Vented during Aneth Plant Shut-Down (12/97 & 1/98)**

Page 3 of 3

	Mule 31M 43-037-31710 SW/SW Sec31-41-24E	Big Sky 6E(6L) 43-037-31714 NW/SW Sec 6-42S-25E	Mule 31-K(N) 43-037-31617 NE/SW Sec 31-41S-24E	DAILY TOTALS
<b>Vented Gas (MCF) December 1997</b>				
25-Dec	25	62	25	715
26-Dec	25	94		744
27-Dec	20	94	21	730
28-Dec	19	90	21	735
29-Dec	28	62	29	753
30-Dec	22	62		686
31-Dec	23	62		661
<b>Dec Total</b>	<b>162</b>	<b>526</b>	<b>96</b>	<b>5024</b>
<b>Vented Gas (MCF) January 1998</b>				
1-Jan	22	62		704
2-Jan	23	63		686
3-Jan	23	63		680
4-Jan	23	63		678
5-Jan	23	63		717
6-Jan	22	63		693
7-Jan	23	63	21	720
8-Jan	23	63	21	717
9-Jan	23	64	21	736
10-Jan	0	64	0	276
11-Jan	0	0	0	0
12-Jan	0	0	0	0
13-Jan	0	0	0	0
14-Jan	0	0	0	0
15-Jan	0	0	0	0
16-Jan	0	0	0	0
17-Jan	0	0	0	0
18-Jan	23	73	0	359
19-Jan	25	73	21	613
20-Jan	23	2	23	312
<b>Jan Total</b>	<b>276</b>	<b>779</b>	<b>107</b>	<b>7891</b>
<b>Grand Total</b>	<b>438</b>	<b>1305</b>	<b>203</b>	<b>12915</b>

**STATE OF UTAH**  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

FORM 9

**SUNDRY NOTICES AND REPORTS ON WELLS**

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

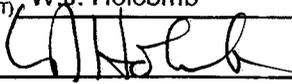
1. TYPE OF WELL OIL WELL <input checked="" type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER <u>SEE ATTACHED</u>		5. LEASE DESIGNATION AND SERIAL NUMBER: <b>SEE ATTACHED</b>
2. NAME OF OPERATOR: <b>RIM Southwest Corporation</b>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME: <b>Navajo</b>
3. ADDRESS OF OPERATOR: <b>P.O. Box 145                      CITY Farmington                      STATE NM                      ZIP 87499</b>		7. UNIT or CA AGREEMENT NAME: <b>SEE ATTACHED</b>
4. LOCATION OF WELL FOOTAGES AT SURFACE: <b>SEE ATTACHED</b>		8. WELL NAME and NUMBER: <b>SEE ATTACHED</b>
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: _____		9. API NUMBER: <b>SEE ATTACH</b>
COUNTY: <b>San Juan</b>		10. FIELD AND POOL, OR WILDCAT: <b>Greater Aneth</b>
STATE: <b>UTAH</b>		

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate)  Approximate date work will start: _____	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
<input type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only)  Date of work completion: _____	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input checked="" type="checkbox"/> OTHER: <b>Corporate Name Change</b>
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.  
**Corporate Name Change from Harken Southwest Corporation to RIM Southwest Corporation, effective December 1, 2000 for reporting requirements.**

**RECEIVED**  
  
APR 27 2001  
  
DIVISION OF  
OIL, GAS AND MINING

NAME (PLEASE PRINT) <u>W. J. Holcomb</u>	TITLE <u>Vice-President</u>
SIGNATURE <u></u>	DATE <u>4/23/2001</u>

(This space for State use only)



**STATE OF UTAH**  
**DIVISION OF OIL, GAS AND MINING**  
 1594 West North Temple, Suite 1210, PO Box 145801, Salt Lake City, UT 84114-5801

**MONTHLY OIL AND GAS PRODUCTION REPORT**

OPERATOR NAME AND ADDRESS

Susan Herrera  
 RIM SOUTHWEST CORPORATION  
 C/O HOLCOMB OIL AND GAS, INC.  
 PO BOX 2058  
 FARMINGTON, NM 87499-2058

UTAH ACCOUNT NUMBER:                     N9290                      
 REPORT PERIOD (MONTH/YEAR):                     02/2001                      
 AMENDED REPORT  (Highlight Changes)

WELL NAME			Producing Zone	Well Status	Well Type	Days Oper	Production Volumes			
API Number	Entity	Location					OIL (BBL)	GAS (MCF)	WATER (BBL)	
✓	4303731562	11161	42S 23E 01	DSCR	P	OW	27	800	778	36
✓	4303731572	11207	42S 24E 05	DSCR	P	OW	28	1,187	1,284	0
✓	4303731573	11215	42S 23E 01	DSCR	P	OW	28	297	504	0
✓	4303731595	11224	41S 23E 36	DSCR	S	OW	0	0	0	0
✓	4303731617	11326	41S 24E 31	DSCR	P	OW	28	308	348	73
✓	4303731616	11479	41S 25E 35	DSCR	S	OW	0	0	0	0
✓	4303731708	11496	41S 24E 31	DSCR	P	OW	28	489	0	0
✓	4303731709	11497	41S 24E 31	DSCR	S	OW	0	0	0	0
✓	4303731710	11498	41S 24E 31	DSCR	P	OW	28	1,074	333	120
✓	4303731714	11722	42S 25E 06	DSCR	P	OW	26	262	551	0
✓	4303731741	11734	41S 25E 32	DSCR	TA	NA	0	0	0	0
✓	4303731744	11773	42S 24E 06	DSCR	P	OW	28	205	303	0
<b>TOTALS</b>								<b>4622</b>	<b>4101</b>	<b>229</b>

COMMENTS: \_\_\_\_\_

I hereby certify that this report is true and complete to the best of my knowledge.

Date:                     April 13, 2001                    

Signature

  
 Susan M. Herrera

**RECEIVED**

Telephone Number                     (505) 326-0550                    

APR 17 2001

DIVISION OF  
 OIL, GAS AND MINING

**OPERATOR CHANGE WORKSHEET**

**ROUTING**

1. GLH
2. CDW
3. FILE

Change of Operator (Well Sold)

Designation of Agent/Operator

**X Operator Name Change**

Merger

The operator of the well(s) listed below has changed, effective:

**12/1/2000**

<b>FROM:</b> (Old Operator): N9290-Harken Southwest Corporation 5 Inverness Drive, East Denver, CO 80112  Phone: (303) 799-9828	<b>TO:</b> ( New Operator): N1715-Rim Southwest Corporation PO Box 145 Farmington, NM 87499  Phone: (505) 327-5531
--	---

**CA No.**

**Unit:**

**WELL(S)**

NAME	SEC	TWN	RNG	API NO	ENTITY NO	LEASE TYPE	WELL TYPE	WELL STATUS
NAVAJO TRIBAL 32-26	26	400S	220E	4303731060	9990	Indian	OW	S
NAVAJO TRIBAL 14-10	10	400S	240E	4303730977	10130	Indian	OW	P
NAVAJO TRIBAL 23-13	13	400S	240E	4303730971	9420	Indian	OW	P
CAJON MESA 8D-1	08	400S	250E	4303731497	11074	Indian	OW	P
MONUMENT 8N-2	08	400S	250E	4303731509	11087	Indian	OW	P
RUNWAY 10G-1	10	400S	250E	4303731515	11105	Indian	OW	P
RUNWAY 10E-2	10	400S	250E	4303731550	11128	Indian	GW	P
RUNWAY 10C-5A	10	400S	250E	4303731597	11152	Indian	OW	P
MONUMENT 17E-2	17	400S	250E	4303731547	11139	Indian	OW	P
STERLING 36L-1	36	410S	230E	4303731595	11224	Indian	OW	S
MULE 31K (N)	31	410S	240E	4303731617	11326	Indian	OW	P
BURRO 31I	31	410S	240E	4303731708	11496	Indian	OW	P
MULE 31M	31	410S	240E	4303731710	11498	Indian	OW	P
JACK 31G	31	410S	240E	4303731709	11497	Indian	OW	S
CLAY HILL CANYON 32D	32	410S	250E	4303731741	11734	Indian	OW	TA
NORTH HERON 35C	35	410S	250E	4303731616	11479	Indian	OW	S
BLUE HOGAN 1J-1	01	420S	230E	4303731562	11161	Indian	OW	P
BROWN HOGAN 1A-2	01	420S	230E	4303731573	11215	Indian	OW	P
NAVAJO TRIBAL 41-2	02	420S	240E	4303731041	9437	Indian	OW	P
SAHGZIE 1	05	420S	240E	4303731472	11032	Indian	OW	P
ANASAZI 1	05	420S	240E	4303731478	11042	Indian	OW	P
ANASAZI 5L-3	05	420S	240E	4303731572	11207	Indian	OW	P
ANASAZI 6H-1	06	420S	240E	4303731744	11773	Indian	OW	P
LONE MOUNTAIN CREEK 12F-1	12	420S	240E	4303731545	11148	Indian	OW	P
BIG SKY 6E (6L) 1	06	420S	250E	4303731714	11722	Indian	OW	P

**OPERATOR CHANGES DOCUMENTATION**

Enter date after each listed item is completed

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 4/27/2001
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 4/27/2001
3. The new company was checked on the **Department of Commerce, Division of Corporations** Database on: 6/30/2003

4. Is the new operator registered in the State of Utah: YES Business Number: 794466-0143
5. If **NO**, the operator was contacted contacted on: \_\_\_\_\_
6. (R649-9-2)Waste Management Plan has been received on: 8/13/2003

7. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: not given

8. **Federal and Indian Units:**

The BLM or BIA has approved the successor of unit operator for wells listed on: n/a

9. **Federal and Indian Communization Agreements ("CA"):**

The BLM or BIA has approved the operator for all wells listed within a CA on: n/a

10. **Underground Injection Control ("UIC")** The Division has approved UIC Form 5, **Transfer of Authority to Inject**, for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: n/a

**DATA ENTRY:**

1. Changes entered in the **Oil and Gas Database** on: 8/26/2003
2. Changes have been entered on the **Monthly Operator Change Spread Sheet** on: 8/26/2003
3. Bond information entered in RBDMS on: n/a
4. Fee wells attached to bond in RBDMS on: n/a

**STATE WELL(S) BOND VERIFICATION:**

1. State well(s) covered by Bond Number: n/a

**FEDERAL WELL(S) BOND VERIFICATION:**

1. Federal well(s) covered by Bond Number: n/a

**INDIAN WELL(S) BOND VERIFICATION:**

1. Indian well(s) covered by Bond Number: RLB0001937

**FEE WELL(S) BOND VERIFICATION:**

1. (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond Number n/a
2. The **FORMER** operator has requested a release of liability from their bond on: n/a  
The Division sent response by letter on: n/a

**LEASE INTEREST OWNER NOTIFICATION:**

3. (R649-2-10) The **FORMER** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: n/a

**COMMENTS:**

Because this was a merger, all LA and PA wells belong to Rim Southwest also. However, they are still on our computer as Harken Southwest because no list was provided to move them.

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

**SUNDRY NOTICES AND REPORTS ON WELLS**

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

5. Lease Designation and Serial No.

See Attached

6. If Indian, Allottee or Tribe Name

Navajo Nation

7. If Unit or CA, Agreement Designation

**SUBMIT IN TRIPLICATE**

1. Type of Well

Oil Well  Gas Well  Other

2. Name of Operator

RIM SOUTHWEST CORPORATION

3. Address and Telephone No.

P. O. Box 145, Farmington, NM 87499 (505)327-5531

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

8. Well Name and No.

9. API Well No.

10. Field and Pool, or Exploratory Area

11. County or Parish, State

San Juan County  
Utah

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

TYPE OF ACTION

- Notice of Intent
- Subsequent Report
- Final Abandonment Notice

- Abandonment
- Recompletion
- Plugging Back
- Casing Repair
- Altering Casing
- Other Vent/Flare Gas

- Change of Plans
- New Construction
- Non-Routine Fracturing
- Water Shut-Off
- Conversion to Injection
- Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Please be advised that RIM Southwest Corporation is requesting approval to vent gas until September 14, 2001. After September 14, we request permission to flare the gas until the Aneth Plant is back on line.

Attachment

cc: State of Utah  
Navajo Nation-Minerals  
Navajo Nation EPA - Air Quality  
BIA - Gallup, NM

Accepted by the  
Utah Division of  
Oil, Gas and Mining

Date: 9/17/01  
By: [Signature]

Ext. Oct 15, 2001

Federal Approval Of This  
Action Is Necessary

COPY SENT TO OPERATOR  
Date: 9-17-01  
Initials: [Signature]

RECEIVED

7 28 1 001  
DIVISION OF  
OIL, GAS AND MINING

14. I hereby certify that the foregoing is true and correct

Signed [Signature]

Title W. J. Holcomb, Vice President Date 8/29/01

(This space for Federal or State office use)

Approved by \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_  
Conditions of approval, if any:

RIM SOUTHWEST CORPORATION

LEASE NUMBER	WELL NAME	SEC-TWN-RNG	ESTIMATED GAS	
			VENTED	MCF/DAY
1420603373	Big Sky 6E (6L)	06-42S-25E	19	
NOC 14205297				
(NMNM 5756)	Monument 8N-2	08-40S-25E	18	
(NMNM 5757)	Cajon Mesa 8D-1	08-40S-25E	0	
NOG 8308-1033	Navajo Tribal 23-13	13-40S-24E	23	
	Navajo Tribal 14-10	10-40S-24E	1	
	Navajo Tribal 41-2	02-42S-24E	8	
	Navajo Tribal 32-26	26-40S-22E	8	
NOG 8707-1162	Sahgzie #1	05-42S-24E	16	
	Anasazi #1	05-42S-24E	67	
NOG 8707-1170	Runway 10G-1	10-40S-25E	SI	
	Runway 10C-5A	10-40S-25E	SI	
NOG 8707-1190	Runway 10E-2	10-40S-25E	17	
NOG 8707-1191	Monument 17E-2	17-40S-25e	0	
NOG 8707-1206	Blue Hogan 1J-1	01-42S-23E	27	
	Brown Hogan 1A-2	01-42S-23E	18	
NOG 8707-12321	Burro 31-1	31-41S-24E	1	
	Jack 31G	31-41S-24E	SI	
	Mule 31K (N)	31-41S-24E	7	
	Mule 31M	31-41S-24E	24	
<b>TOTAL AVERAGE</b>			<b>254</b>	

- 43-037-31714

- 43-037-31509

- 43-037-31497

- 43-037-30971

- 43-037-30977

- 43-037-31041

- 43-037-31060

- 43-037-31472

- 43-037-31478

- 43-037-31515

- 43-037-31597

- 43-037-31550

- 43-037-31547

- 43-037-31562

- 43-037-31573

- 43-037-31708

- 43-037-31709

- 43-037-31617

- 43-037-31710



2030 AFTON PLACE  
 FARMINGTON, N.M. 87401  
 (505) 325-6622

ANALYSIS NO. HSC80013  
 CUST. NO. 33500- 10095

**WELL/LEASE INFORMATION**

<b>CUSTOMER NAME</b>	HARKEN SOUTHWEST CORP.	<b>SOURCE</b>	N/A
<b>WELL NAME</b>	MULE 31M	<b>PRESSURE</b>	25 PSIG
<b>COUNTY/ STATE</b>	SAN JUAN UT	<b>SAMPLE TEMP</b>	76 DEG.F
<b>LOCATION</b>	ANETH	<b>WELL FLOWING</b>	Y
<b>FIELD</b>		<b>DATE SAMPLED</b>	6/30/98
<b>FORMATION</b>		<b>SAMPLED BY</b>	FGM
<b>CUST.STN.NO.</b>	202E412018	<b>FOREMAN/ENGR.</b>	STEVEN J. MANSUR

**REMARKS**

**ANALYSIS**

COMPONENT	MOLE %	GPM**	B.T.U.*	SP.GR *
NITROGEN	1.332	0.0000	0.00	0.0129
CO2	0.112	0.0000	0.00	0.0017
METHANE	57.114	0.0000	578.17	0.3164
ETHANE	19.739	5.2802	350.11	0.2049
PROPANE	11.863	3.2694	299.17	0.1806
I-BUTANE	1.498	0.4900	48.83	0.0301
N-BUTANE	4.080	1.2864	133.41	0.0819
I-PENTANE	1.011	0.3699	40.54	0.0252
N-PENTANE	1.215	0.4401	48.82	0.0303
HEXANE PLUS	2.036	0.8883	104.67	0.0655
<b>TOTAL</b>	<b>100.000</b>	<b>12.0243</b>	<b>1,603.72</b>	<b>0.9494</b>

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

\*\* @ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR	(1/Z)	1.0067
BTU/CU.FT (DRY) CORRECTED FOR	(1/Z)	1,614.5
BTU/CU.FT (WET) CORRECTED FOR	(1/Z)	1,586.4
REAL SPECIFIC GRAVITY		0.9559

ANALYSIS RUN AT 14.730 PSIA & 60 DEGREES F

DRY BTU @ 14.650	1,605.7
DRY BTU @ 14.696	1,610.7
DRY BTU @ 14.730	1,614.5
DRY BTU @ 15.025	1,646.8

CYLINDER #	SJ99
CYLINDER PRESSURE	10 PSIG
DATE RUN	7/1/98
ANALYSIS RUN BY	DAVE MARTIN



2030 AFTON PLACE  
 FARMINGTON, N.M. 87401  
 (505) 325-6622

ANALYSIS NO. HSC80012  
 CUST. NO. 33500- 10015

**WELL/LEASE INFORMATION**

<b>CUSTOMER NAME</b>	HARKEN SOUTHWEST CORP.	<b>SOURCE</b>	N/A
<b>WELL NAME</b>	MULE 31K	<b>PRESSURE</b>	24 PSIG
<b>COUNTY/STATE</b>	SAN JUAN UT	<b>SAMPLE TEMP</b>	84 DEG.F
<b>LOCATION</b>	ANETH	<b>WELL FLOWING</b>	Y
<b>FIELD</b>		<b>DATE SAMPLED</b>	6/30/98
<b>FORMATION</b>	DESERT CREEK	<b>SAMPLED BY</b>	FGM
<b>CUST.STN.NO.</b>	202E340052	<b>FOREMAN/ENGR.</b>	STEVEN J. MANSUR

**REMARKS**

**ANALYSIS**

COMPONENT	MOLE %	GPM**	B.T.U.*	SP.GR *
NITROGEN	1.925	0.0000	0.00	0.0186
CO2	0.133	0.0000	0.00	0.0020
METHANE	63.617	0.0000	643.99	0.3524
ETHANE	16.771	4.4862	297.47	0.1741
PROPANE	9.543	2.6301	240.66	0.1453
I-BUTANE	1.205	0.3942	39.28	0.0242
N-BUTANE	3.315	1.0452	108.39	0.0665
I-PENTANE	0.794	0.2905	31.84	0.0198
N-PENTANE	0.944	0.3419	37.93	0.0235
HEXANE PLUS	1.753	0.7648	90.12	0.0564
<b>TOTAL</b>	<b>100.000</b>	<b>9.9529</b>	<b>1,489.68</b>	<b>0.8829</b>

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

\*\* @ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR	(1/Z)	1.0056
BTU/CU.FT (DRY) CORRECTED FOR	(1/Z)	1,498.0
BTU/CU.FT (WET) CORRECTED FOR	(1/Z)	1,472.0
REAL SPECIFIC GRAVITY		0.8877

ANALYSIS RUN AT 14.730 PSIA & 60 DEGREES F

DRY BTU @ 14.650	1,489.9
DRY BTU @ 14.696	1,494.6
DRY BTU @ 14.730	1,498.0
DRY BTU @ 15.025	1,528.0

CYLINDER #	048A
CYLINDER PRESSURE	24 PSIG
DATE RUN	7/1/98
ANALYSIS RUN BY	CHELLE DURBIN



2030 AFTON PLACE  
 FARMINGTON, N.M. 87401  
 (505) 325-6622

ANALYSIS NO. HSC80009  
 CUST. NO. 33500- 10080

**WELL/LEASE INFORMATION**

<b>CUSTOMER NAME</b>	HARKEN SOUTHWEST CORP.	<b>SOURCE</b>	N/A
<b>WELL NAME</b>	JACK 31G	<b>PRESSURE</b>	28 PSIG
<b>COUNTY/ STATE</b>	SAN JUAN UT	<b>SAMPLE TEMP</b>	76 DEG.F
<b>LOCATION</b>	ANETH	<b>WELL FLOWING</b>	Y
<b>FIELD</b>		<b>DATE SAMPLED</b>	6/30/98
<b>FORMATION</b>		<b>SAMPLED BY</b>	FGM
<b>CUST.STN.NO.</b>	202E410005	<b>FOREMAN/ENGR.</b>	STEVEN J. MANSUR

**REMARKS**

**ANALYSIS**

COMPONENT	MOLE %	GPM**	B.T.U.*	SP.GR *
NITROGEN	1.975	0.0000	0.00	0.0191
CO2	0.062	0.0000	0.00	0.0009
METHANE	70.488	0.0000	713.55	0.3904
ETHANE	13.388	3.5813	237.46	0.1390
PROPANE	7.057	1.9449	177.97	0.1075
I-BUTANE	1.012	0.3310	32.99	0.0203
N-BUTANE	2.613	0.8239	85.44	0.0524
I-PENTANE	0.750	0.2744	30.08	0.0187
N-PENTANE	0.920	0.3332	36.97	0.0229
HEXANE PLUS	1.735	0.7570	89.20	0.0558
<b>TOTAL</b>	<b>100.000</b>	<b>8.0458</b>	<b>1,403.66</b>	<b>0.8271</b>

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

\*\* @ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z) 1.0049  
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z) 1,410.5  
 BTU/CU.FT (WET) CORRECTED FOR (1/Z) 1,386.0  
 REAL SPECIFIC GRAVITY 0.8311

ANALYSIS RUN AT 14.730 PSIA & 60 DEGREES F

DRY BTU @ 14.650 1,402.9  
 DRY BTU @ 14.696 1,407.3  
 DRY BTU @ 14.730 1,410.5  
 DRY BTU @ 15.025 1,438.8

CYLINDER # 004  
 CYLINDER PRESSURE 12 PSIG  
 DATE RUN 7/1/98  
 ANALYSIS RUN BY DAVE MARTIN



2030 AFTON PLACE  
 FARMINGTON, N.M. 87401  
 (505) 325-6622

ANALYSIS NO. HSC00018  
 CUST. NO. 33500- 10035

**WELL/LEASE INFORMATION**

CUSTOMER NAME	HARKEN SOUTHWEST CORP.	SOURCE	N/A
WELL NAME	BIG SKY 6E	PRESSURE	17 PSIG
COUNTY/ STATE	SAN JUAN UT	SAMPLE TEMP	21 DEG.F
LOCATION	ANETH	WELL FLOWING	Y
FIELD		DATE SAMPLED	12/23/00
FORMATION		SAMPLED BY	FGM
CUST.STN.NO.	202E430640	FOREMAN/ENGR.	STEVEN J. MANSUR

**REMARKS**

**ANALYSIS**

COMPONENT	MOLE %	GPM**	B.T.U.*	SP.GR *
NITROGEN	1.658	0.0000	0.00	0.0160
CO2	0.037	0.0000	0.00	0.0006
METHANE	66.226	0.0000	670.41	0.3668
ETHANE	17.222	4.6069	305.47	0.1788
PROPANE	9.526	2.6254	240.24	0.1450
I-BUTANE	1.012	0.3310	32.99	0.0203
N-BUTANE	2.724	0.8589	89.07	0.0547
I-PENTANE	0.496	0.1815	19.89	0.0124
N-PENTANE	0.553	0.2003	22.22	0.0138
HEXANE PLUS	0.546	0.2382	28.07	0.0176
<b>TOTAL</b>	<b>100.000</b>	<b>9.0422</b>	<b>1,408.36</b>	<b>0.8260</b>

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

\*\* @ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z) 1.0048  
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z) 1,415.4  
 BTU/CU.FT (WET) CORRECTED FOR (1/Z) 1,390.8  
 REAL SPECIFIC GRAVITY 0.8302

ANALYSIS RUN AT 14.730 PSIA & 60 DEGREES F

DRY BTU @ 14.650 1,407.7  
 DRY BTU @ 14.696 1,412.2  
 DRY BTU @ 14.730 1,415.4  
 DRY BTU @ 15.025 1,443.8

CYLINDER # 007  
 CYLINDER PRESSURE 17 PSIG  
 DATE RUN 12/28/00  
 ANALYSIS RUN BY GINA HANON

CQM, INC. ON-SITE GAS ANALYSIS  
 1427 W. AZTEC BLVD. #3  
 AZTEC, NM 87410 505-333-2003

Source: ELKHORN FIELD SERVICES Report Date: 06/19/2001 13:48:14  
 Station #: 78-153 Sample Date: 06/13/2001  
 Station Name: BLUE/BROWN HOGAN Flowing Pressure: 0 psig  
 Field: RIM SOUTHWEST Flowing Temp.: 0 F

Method: c:\mti\ezchrom\200\methods\H2S 1.MET  
 File: c:\mti\ezchrom\200\chrom\78\_15306.2

## Gas Analysis by Chromatograph

Name	Mole %	BTU	RD	GPM
Nitrogen	3.577	0.000	0.035	
Methane	55.640	563.264	0.308	
CO2	0.033	0.000	0.001	
Ethane	17.739	314.636	0.184	4.744
H2S (APPROX)	0.000	0.000	0.000	
Propane	11.983	302.202	0.182	3.302
i-Butane	1.627	53.031	0.033	0.532
n-Butane	4.370	142.892	0.088	1.378
i-Pentane	1.194	47.881	0.030	0.437
n-Pentane	1.465	58.866	0.036	0.531
Hexanes	1.955	93.193	0.058	0.804
Heptanes	0.373	20.572	0.013	0.172
Octanes	0.044	2.756	0.002	0.023
Nonanes	0.000	0.000	0.000	

Ideal Total 100.000 1599.293 0.969 11.922  
 Unnormalized Total 111.244

Gross BTU/Real Cu. Ft.  
 (@ 60 deg F, 14.730)

Dry = 1610.156  
 Sat. = 1583.743

Actual = 1610.156

( 0.000 lbs. water/MMCF)

Gasoline Content

Propane GPM = 3.302

Butane GPM = 1.910

Gasoline GPM = 1.966

26# Gasoline GPM = 3.344

Total GPM = 11.922

Real Relative Density Calculated = 0.9755

On-Site Relative Density = 0.0000

Gas Compressibility = 0.9933



2030 AFTON PLACE  
 FARMINGTON, N.M. 87401  
 (505) 325-6622

ANALYSIS NO. HSC00010  
 CUST. NO. 33500- 10090

**WELL/LEASE INFORMATION**

<b>CUSTOMER NAME</b>	HARKEN SOUTHWEST CORP.	<b>SOURCE</b>	N/A
<b>WELL NAME</b>	MONUMENT 17-E-2	<b>PRESSURE</b>	20 PSIG
<b>COUNTY/ STATE</b>	SAN JUAN UT	<b>SAMPLE TEMP</b>	47 DEG.F
<b>LOCATION</b>	ANETH	<b>WELL FLOWING</b>	Y
<b>FIELD</b>		<b>DATE SAMPLED</b>	12/21/00
<b>FORMATION</b>		<b>SAMPLED BY</b>	FGM
<b>CUST.STN.NO.</b>	202E311659	<b>FOREMAN/ENGR.</b>	STEVEN J. MANSUR

**REMARKS**

**ANALYSIS**

COMPONENT	MOLE %	GPM**	B.T.U.*	SP.GR *
NITROGEN	0.958	0.0000	0.00	0.0093
CO2	0.071	0.0000	0.00	0.0011
METHANE	67.968	0.0000	688.04	0.3765
ETHANE	14.933	3.9946	264.87	0.1550
PROPANE	8.159	2.2486	205.76	0.1242
I-BUTANE	0.965	0.3157	31.45	0.0194
N-BUTANE	2.976	0.9383	97.31	0.0597
I-PENTANE	0.754	0.2759	30.24	0.0188
N-PENTANE	1.118	0.4049	44.92	0.0279
HEXANE PLUS	2.098	0.9154	107.86	0.0675
<b>TOTAL</b>	<b>100.000</b>	<b>9.0934</b>	<b>1,470.45</b>	<b>0.8593</b>

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

\*\* @ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR	(1/Z)	1.0054
BTU/CU.FT (DRY) CORRECTED FOR	(1/Z)	1,479.5
BTU/CU.FT (WET) CORRECTED FOR	(1/Z)	1,453.8
REAL SPECIFIC GRAVITY		0.8647

ANALYSIS RUN AT 14.730 PSIA & 60 DEGREES F

DRY BTU @ 14.650	1,471.5
DRY BTU @ 14.696	1,476.1
DRY BTU @ 14.730	1,479.5
DRY BTU @ 15.025	1,509.2

CYLINDER #	005
CYLINDER PRESSURE	22 PSIG
DATE RUN	12/22/00
ANALYSIS RUN BY	AMY JUSTICE



2030 AFTON PLACE  
 FARMINGTON, N.M. 87401  
 (505) 325-6622

ANALYSIS NO. HSC00014  
 CUST. NO. 33500- 10120

**WELL/LEASE INFORMATION**

<b>CUSTOMER NAME</b>	HARKEN SOUTHWEST CORP.	<b>SOURCE</b>	N/A
<b>WELL NAME</b>	RUNAWAY 10E2	<b>PRESSURE</b>	21 PSIG
<b>COUNTY/ STATE</b>	SAN JUAN UT	<b>SAMPLE TEMP</b>	60 DEG.F
<b>LOCATION</b>	ANETH	<b>WELL FLOWING</b>	Y
<b>FIELD</b>		<b>DATE SAMPLED</b>	12/21/00
<b>FORMATION</b>		<b>SAMPLED BY</b>	FGM
<b>CUST.STN.NO.</b>	202E311617	<b>FOREMAN/ENGR.</b>	STEVEN J. MANSUR

**REMARKS**

**ANALYSIS**

COMPONENT	MOLE %	GPM**	B.T.U.*	SP.GR *
NITROGEN	0.534	0.0000	0.00	0.0052
CO2	0.053	0.0000	0.00	0.0008
METHANE	50.326	0.0000	509.45	0.2788
ETHANE	23.092	6.1771	409.58	0.2397
PROPANE	14.269	3.9325	359.85	0.2173
I-BUTANE	1.588	0.5194	51.76	0.0319
N-BUTANE	4.428	1.3961	144.79	0.0889
I-PENTANE	0.988	0.3615	39.62	0.0246
N-PENTANE	1.348	0.4882	54.17	0.0336
HEXANE PLUS	3.374	1.4721	173.46	0.1086
<b>TOTAL</b>	<b>100.000</b>	<b>14.3471</b>	<b>1,742.68</b>	<b>1.0292</b>

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

\*\* @ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR	(1/Z)	1.0082
BTU/CU.FT (DRY) CORRECTED FOR	(1/Z)	1,758.8
BTU/CU.FT (WET) CORRECTED FOR	(1/Z)	1,728.2
REAL SPECIFIC GRAVITY		1.0390

ANALYSIS RUN AT 14.730 PSIA & 60 DEGREES F

DRY BTU @ 14.650	1,749.3
DRY BTU @ 14.696	1,754.8
DRY BTU @ 14.730	1,758.8
DRY BTU @ 15.025	1,794.1

CYLINDER #	AZT035
CYLINDER PRESSURE	26 PSIG
DATE RUN	12/22/00
ANALYSIS RUN BY	AMY JUSTICE



2030 AFTON PLACE  
 FARMINGTON, N.M. 87401  
 (505) 325-6622

ANALYSIS NO. HSC00013  
 CUST. NO. 33500- 10115

**WELL/LEASE INFORMATION**

<b>CUSTOMER NAME</b>	HARKEN SOUTHWEST CORP.	<b>SOURCE</b>	N/A
<b>WELL NAME</b>	RUNAWAY 10C 5-A	<b>PRESSURE</b>	9 PSIG
<b>COUNTY/ STATE</b>	SAN JUAN UT	<b>SAMPLE TEMP</b>	69 DEG.F
<b>LOCATION</b>	ANETH	<b>WELL FLOWING</b>	Y
<b>FIELD</b>		<b>DATE SAMPLED</b>	12/21/00
<b>FORMATION</b>		<b>SAMPLED BY</b>	FGM
<b>CUST.STN.NO.</b>	202E308719	<b>FOREMAN/ENGR.</b>	STEVEN J. MANSUR

**REMARKS**

**ANALYSIS**

COMPONENT	MOLE %	GPM**	B.T.U.*	SP.GR *
NITROGEN	0.794	0.0000	0.00	0.0077
CO2	0.109	0.0000	0.00	0.0017
METHANE	56.637	0.0000	573.34	0.3137
ETHANE	18.737	5.0121	332.34	0.1945
PROPANE	11.185	3.0826	282.07	0.1703
I-BUTANE	1.296	0.4239	42.24	0.0260
N-BUTANE	3.814	1.2026	124.71	0.0765
I-PENTANE	1.035	0.3787	41.51	0.0258
N-PENTANE	1.558	0.5643	62.60	0.0388
HEXANE PLUS	4.835	2.1095	248.57	0.1556
<b>TOTAL</b>	<b>100.000</b>	<b>12.7737</b>	<b>1,707.38</b>	<b>1.0106</b>

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

\*\* @ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR	(1/Z)	1.0080
BTU/CU.FT (DRY) CORRECTED FOR	(1/Z)	1,723.7
BTU/CU.FT (WET) CORRECTED FOR	(1/Z)	1,693.7
REAL SPECIFIC GRAVITY		1.0203

ANALYSIS RUN AT 14.730 PSIA & 60 DEGREES F

DRY BTU @ 14.650	1,714.3
DRY BTU @ 14.696	1,719.7
DRY BTU @ 14.730	1,723.7
DRY BTU @ 15.025	1,758.2

CYLINDER #	A002
CYLINDER PRESSURE	14 PSIG
DATE RUN	12/22/00
ANALYSIS RUN BY	AMY JUSTICE

CQM, INC.  
1427 W.AZTEC, BLVD. #3 AZTEC, NM 87410  
505-333-2003

Source: ELKHORN FIELD SERVICE Report Date: 06/19/2001 12:58:11  
Station #: 78-138 Sample Date: 06/13/2001  
Station Name: RUNWAY 10-G-1 Flowing Pressure: 0 psig  
Field: RIM SOUTHWEST Flowing Temp.: 0 F

Method: c:\mti\ezchrom\200\methods\sour2.met  
File: c:\mti\ezchrom\200\chrom\78\_13806.1

## Gas Analysis by Chromatograph

Name	Mole %	BTU	RD	GPM
Nitrogen	1.082	0.000	0.010	
Methane	59.728	604.648	0.331	
CO2	0.074	0.000	0.001	
Ethane	18.511	328.328	0.192	4.951
H2S (approx)	0.000	0.000	0.000	
Propane	12.402	312.769	0.189	3.417
i-Butane	1.191	38.820	0.024	0.390
n-Butane	3.539	115.720	0.071	1.116
i-Pentane	0.926	37.134	0.023	0.335
n-Pentane	1.239	49.785	0.031	0.453
Hexanes	0.634	39.756	0.025	0.343
Heptanes	0.424	23.385	0.015	0.196
Octanes	0.050	3.132	0.002	0.026

Ideal Total 100.000 1553.477 0.914 11.227  
Unnormalized Total 92.627

Gross BTU/Real Cu. Ft. (@ 60 deg F, 14.730)	Gasoline Content
Dry = 1563.024	Propane GPM = 3.417
Sat. = 1537.392	Butane GPM = 1.505
Actual = 1563.024	Gasoline GPM = 1.353
( 0.000 lbs. water/MMCF)	2.6# Gasoline CPM = 2.469
	Total GPM = 11.227

Real Relative Density Calculated = 0.9190

On-Site Relative Density = 0.0000

Gas Compressibility = 0.9939

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## CQM, INC. ON-SITE GAS ANALYSIS

1427 W. AZTEC BLVD. #3  
AZTEC, NM 87410 505-333-2003

Source: ELKHORN FIELD SERVICES Report Date: 06/19/2001 13:53:04  
 Station #: 78-148 Sample Date: 06/13/2001  
 Station Name: SAGEEZIE/ANASAZI Flowing Pressure: 0 psig  
 Field: RIM SOUTHWEST Flowing Temp.: 0 F

Method: c:\mti\ezchrom\200\methods\H2S\_1.MET  
 File: c:\mti\ezchrom\200\chrom\78\_14806.1

## Gas Analysis by Chromatograph

Name	Mole %	BTU	RD	GPM
Nitrogen	0.664	0.000	0.006	
Methane	44.440	449.882	0.246	
CO2	0.068	0.000	0.001	
Ethane	23.771	421.625	0.247	6.358
H2S (APPROX)	0.000	0.000	0.000	
Propane	17.469	440.554	0.266	4.814
i-Butane	2.367	77.151	0.048	0.774
n-Butane	5.635	184.256	0.113	1.777
i-Pentane	1.485	59.551	0.037	0.543
n-Pentane	1.729	69.474	0.043	0.626
Hexanes	1.947	92.812	0.058	0.801
Heptanes	0.378	20.848	0.013	0.174
Octanes	0.047	2.944	0.002	0.024
Nonanes	0.000	0.000	0.000	

Ideal Total 100.000 1819.096 1.080 15.891  
 Unnormalized Total 113.650

Gross BTU/Real Cu. Ft. (@ 60 deg F, 14.730)	Gasoline Content
Dry = 1835.446	Propane GPM = 4.814
Sat. = 1805.263	Butane GPM = 2.551
Actual = 1835.446	Gasoline GPM = 2.169
( 0.000 lbs. water/MMCF)	26# Gasoline GPM = 3.945
	Total GPM = 15.891

Real Relative Density Calculated = 1.0892  
 On-Site Relative Density = 0.0000

Gas Compressibility = 0.9911



2030 AFTON PLACE  
 FARMINGTON, N.M. 87401  
 (505) 325-6622

ANALYSIS NO. HSC00012  
 CUST. NO. 33500- 10105

**WELL/LEASE INFORMATION**

<b>CUSTOMER NAME</b>	HARKEN SOUTHWEST CORP.	<b>SOURCE</b>	N/A
<b>WELL NAME</b>	NAVAJO TRIBAL 32-26	<b>PRESSURE</b>	17 PSIG
<b>COUNTY/ STATE</b>	SAN JUAN UT	<b>SAMPLE TEMP</b>	30 DEG.F
<b>LOCATION</b>	ANETH	<b>WELL FLOWING</b>	Y
<b>FIELD</b>		<b>DATE SAMPLED</b>	12/21/00
<b>FORMATION</b>		<b>SAMPLED BY</b>	FGM
<b>CUST.STN.NO.</b>	202A-52531	<b>FOREMAN/ENGR.</b>	STEVEN J. MANSUR

**REMARKS**

**ANALYSIS**

COMPONENT	MOLE %	GPM**	B.T.U.*	SP.GR *
NITROGEN	0.934	0.0000	0.00	0.0090
CO2	0.050	0.0000	0.00	0.0008
METHANE	71.878	0.0000	727.62	0.3981
ETHANE	15.057	4.0277	267.07	0.1563
PROPANE	6.531	1.7999	164.71	0.0994
I-BUTANE	0.770	0.2519	25.10	0.0155
N-BUTANE	1.958	0.6174	64.02	0.0393
I-PENTANE	0.510	0.1866	20.45	0.0127
N-PENTANE	0.663	0.2401	26.64	0.0165
HEXANE PLUS	1.649	0.7195	84.78	0.0531
<b>TOTAL</b>	<b>100.000</b>	<b>7.8431</b>	<b>1,380.39</b>	<b>0.8007</b>

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

\*\* @ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR	(1/Z)	1.0046
BTU/CU.FT (DRY) CORRECTED FOR	(1/Z)	1,387.6
BTU/CU.FT (WET) CORRECTED FOR	(1/Z)	1,363.5
REAL SPECIFIC GRAVITY		0.8049

ANALYSIS RUN AT 14.730 PSIA & 60 DEGREES F

DRY BTU @ 14.650	1,380.1
DRY BTU @ 14.696	1,384.4
DRY BTU @ 14.730	1,387.6
DRY BTU @ 15.025	1,415.4

CYLINDER #	KFL148
CYLINDER PRESSURE	23 PSIG
DATE RUN	12/22/00
ANALYSIS RUN BY	AMY JUSTICE

CQM, INC. ON-SITE GAS ANALYSIS UNIT 2  
 1427 W. AZTEC BLVD. #3  
 AZTEC, NM 87410 505-333-2003

Source: ELKHORN FIELD SERVICES Report Date: 06/19/2001 13:59:32  
 Station #: 78-145 Sample Date: 06/13/2001  
 Station Name: NT41-2 Flowing Pressure: 0 psig  
 Field: RIM SOUTHWEST Flowing Temp.: 0 F

Method: c:\mti\ezchrom\200\methods\H2S\_1.MET  
 File: c:\mti\ezchrom\200\chrom\78\_14506.1

## Gas Analysis by Chromatograph

Name	Mole %	BTU	RD	GPM
Nitrogen	1.152	0.000	0.011	
Methane	56.788	574.886	0.315	
CO2	0.085	0.000	0.001	
Ethane	19.719	349.755	0.205	5.274
H2S (APPROX)	0.000	0.000	0.000	
Propane	12.656	319.174	0.193	3.487
i-Butane	1.519	49.511	0.030	0.497
n-Butane	4.167	136.255	0.084	1.314
i-Pentane	1.029	41.265	0.026	0.377
n-Pentane	1.297	52.116	0.032	0.470
Hexanes	1.366	65.116	0.041	0.562
Heptanes	0.196	10.810	0.007	0.090
Octanes	0.026	1.628	0.001	0.013
Nonanes	0.000	0.000	0.000	

Ideal Total 100.000 1600.514 0.945 12.084  
 Unnormalized Total 110.907

Gross BTU/Real Cu. Ft.

(@ 60 deg F, 14.730)

Dry = 1611.115

Sat. = 1584.681

Actual = 1611.115

( 0.000 lbs. water/MMCF)

Gasoline Content

Propane GPM = 3.487

Butane GPM = 1.811

Gasoline GPM = 1.512

26# Gasoline GPM = 2.826

Total GPM = 12.084

Real Relative Density Calculated = 0.9508

On-Site Relative Density = 0.0000

Gas Compressibility = 0.9934

CQM, INC. ON-SITE GAS ANALYSIS

1427 W. AZTEC BLVD. #3

AZTEC, NM 87410 505-333-2003

Source: ELKHORN FIELD SERVICE Report Date: 06/19/2001 14:32:41  
 Station #: 78-146 Sample Date: 06/14/2001  
 Station Name: NT #23-13 Flowing Pressure: 0 psig  
 Field: RIM SOUTHWEST Flowing Temp.: 0 F

Method: c:\mti\ezchrom\200\methods\H2S 1.MET  
 File: c:\mti\ezchrom\200\chrom\78\_14606.1

## Gas Analysis by Chromatograph

Name	Mole %	BTU	RD	GPM
Nitrogen	1.159	0.000	0.011	
Methane	56.655	573.539	0.314	
CO2	0.136	0.000	0.002	
Ethane	19.548	346.722	0.203	5.228
H2S (APPROX)	0.000	0.000	0.000	
Propane	12.674	319.628	0.193	3.492
i-Butane	1.537	50.097	0.031	0.503
n-Butane	4.064	132.887	0.082	1.281
i-Pentane	0.965	38.698	0.024	0.353
n-Pentane	1.172	47.093	0.029	0.424
Hexanes	1.532	73.029	0.046	0.630
Heptanes	0.424	23.385	0.015	0.196
Octanes	0.134	8.393	0.005	0.069
Nonanes	0.000	0.000	0.000	

Ideal Total 100.000 1613.471 0.954 12.177  
 Unnormalized Total 107.575

Gross BTU/Real Cu. Ft.  
 (@ 60 deg F, 14.730)  
 Dry = 1624.438  
 Sat. = 1597.782  
 Actual = 1624.438  
 ( 0.000 lbs. water/MMCF)

Gasoline Content  
 Propane GPM = 3.492  
 Butane GPM = 1.784  
 Gasoline GPM = 1.672  
 26# Gasoline GPM = 2.953  
 Total GPM = 12.177

Real Relative Density Calculated = 0.9603  
 On-Site Relative Density = 0.0000

Gas Compressibility = 0.9932



2030 AFTON PLACE  
 FARMINGTON, N.M. 87401  
 (505) 325-6622

ANALYSIS NO. HSC00009  
 CUST. NO. 33500- 10085

**WELL/LEASE INFORMATION**

<b>CUSTOMER NAME</b>	HARKEN SOUTHWEST CORP.	<b>SOURCE</b>	N/A
<b>WELL NAME</b>	MONUMENT 8N2	<b>PRESSURE</b>	12 PSIG
<b>COUNTY/ STATE</b>	SAN JUAN UT	<b>SAMPLE TEMP</b>	55 DEG.F
<b>LOCATION</b>	ANETH	<b>WELL FLOWING</b>	Y
<b>FIELD</b>		<b>DATE SAMPLED</b>	12/21/00
<b>FORMATION</b>		<b>SAMPLED BY</b>	FGM
<b>CUST.STN.NO.</b>	202E311589	<b>FOREMAN/ENGR.</b>	STEVEN J. MANSUR

**REMARKS**

**ANALYSIS**

COMPONENT	MOLE %	GPM**	B.T.U.*	SP.GR *
NITROGEN	1.139	0.0000	0.00	0.0110
CO2	0.064	0.0000	0.00	0.0010
METHANE	60.307	0.0000	610.49	0.3341
ETHANE	15.875	4.2466	281.57	0.1648
PROPANE	11.057	3.0473	278.85	0.1684
I-BUTANE	1.628	0.5325	53.06	0.0327
N-BUTANE	5.194	1.6377	169.83	0.1042
I-PENTANE	1.202	0.4398	48.20	0.0299
N-PENTANE	1.620	0.5868	65.09	0.0404
HEXANE PLUS	1.914	0.8351	98.40	0.0616
<b>TOTAL</b>	<b>100.000</b>	<b>11.3257</b>	<b>1,605.49</b>	<b>0.9480</b>

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

\*\* @ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR	(1/Z)	1.0067
BTU/CU.FT (DRY) CORRECTED FOR	(1/Z)	1,617.3
BTU/CU.FT (WET) CORRECTED FOR	(1/Z)	1,589.2
REAL SPECIFIC GRAVITY		0.9551

ANALYSIS RUN AT 14.730 PSIA & 60 DEGREES F

DRY BTU @ 14.650	1,608.5
DRY BTU @ 14.696	1,613.6
DRY BTU @ 14.730	1,617.3
DRY BTU @ 15.025	1,649.7

CYLINDER #	050
CYLINDER PRESSURE	15 PSIG
DATE RUN	12/22/00
ANALYSIS RUN BY	AMY JUSTICE



2030 AFTON PLACE  
 FARMINGTON, N.M. 87401  
 (505) 325-6622

ANALYSIS NO. HSC00010  
 CUST. NO. 33500- 10090

**WELL/LEASE INFORMATION**

<b>CUSTOMER NAME</b>	HARKEN SOUTHWEST CORP.	<b>SOURCE</b>	N/A
<b>WELL NAME</b>	MONUMENT 17-E-2	<b>PRESSURE</b>	20 PSIG
<b>COUNTY/ STATE</b>	SAN JUAN UT	<b>SAMPLE TEMP</b>	47 DEG.F
<b>LOCATION</b>	ANETH	<b>WELL FLOWING</b>	Y
<b>FIELD</b>		<b>DATE SAMPLED</b>	12/21/00
<b>FORMATION</b>		<b>SAMPLED BY</b>	FGM
<b>CUST.STN.NO.</b>	202E311659	<b>FOREMAN/ENGR.</b>	STEVEN J. MANSUR

**REMARKS**

**ANALYSIS**

COMPONENT	MOLE %	GPM**	B.T.U.*	SP.GR *
NITROGEN	0.958	0.0000	0.00	0.0093
CO2	0.071	0.0000	0.00	0.0011
METHANE	67.968	0.0000	688.04	0.3765
ETHANE	14.933	3.9946	264.87	0.1550
PROPANE	8.159	2.2486	205.76	0.1242
I-BUTANE	0.965	0.3157	31.45	0.0194
N-BUTANE	2.976	0.9383	97.31	0.0597
I-PENTANE	0.754	0.2759	30.24	0.0188
N-PENTANE	1.118	0.4049	44.92	0.0279
HEXANE PLUS	2.098	0.9154	107.86	0.0675
<b>TOTAL</b>	<b>100.000</b>	<b>9.0934</b>	<b>1,470.45</b>	<b>0.8593</b>

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

\*\* @ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR	(1/Z)	1.0054
BTU/CU.FT (DRY) CORRECTED FOR	(1/Z)	1,479.5
BTU/CU.FT (WET) CORRECTED FOR	(1/Z)	1,453.8
REAL SPECIFIC GRAVITY		0.8647

ANALYSIS RUN AT 14.730 PSIA & 60 DEGREES F

DRY BTU @ 14.650	1,471.5	CYLINDER #	005
DRY BTU @ 14.696	1,476.1	CYLINDER PRESSURE	22 PSIG
DRY BTU @ 14.730	1,479.5	DATE RUN	12/22/00
DRY BTU @ 15.025	1,509.2	ANALYSIS RUN BY	AMY JUSTICE



2030 AFTON PLACE  
 FARMINGTON, N.M. 87401  
 (505) 325-6622

ANALYSIS NO. HSC00008  
 CUST. NO. 33500- 10000

**WELL/LEASE INFORMATION**

<b>CUSTOMER NAME</b>	HARKEN SOUTHWEST CORP.	<b>SOURCE</b>	N/A
<b>WELL NAME</b>	CAJON 8D1	<b>PRESSURE</b>	12 PSIG
<b>COUNTY/ STATE</b>	SAN JUAN UT	<b>SAMPLE TEMP</b>	42 DEG.F
<b>LOCATION</b>	ANETH	<b>WELL FLOWING</b>	Y
<b>FIELD</b>		<b>DATE SAMPLED</b>	12/21/00
<b>FORMATION</b>	ISMAY	<b>SAMPLED BY</b>	FGM
<b>CUST.STN.NO.</b>	202E311625	<b>FOREMAN/ENGR.</b>	STEVEN J. MANSUR

**REMARKS**

**ANALYSIS**

COMPONENT	MOLE %	GPM**	B.T.U.*	SP.GR *
NITROGEN	0.802	0.0000	0.00	0.0078
CO2	0.070	0.0000	0.00	0.0011
METHANE	58.781	0.0000	595.04	0.3256
ETHANE	18.008	4.8171	319.41	0.1870
PROPANE	12.630	3.4808	318.52	0.1923
I-BUTANE	1.567	0.5126	51.07	0.0314
N-BUTANE	4.747	1.4967	155.22	0.0953
I-PENTANE	0.925	0.3385	37.09	0.0230
N-PENTANE	1.207	0.4372	48.50	0.0301
HEXANE PLUS	1.263	0.5510	64.93	0.0406
<b>TOTAL</b>	<b>100.000</b>	<b>11.6339</b>	<b>1,589.78</b>	<b>0.9341</b>

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

\*\* @ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR	(1/Z)	1.0065
BTU/CU.FT (DRY) CORRECTED FOR	(1/Z)	1,600.8
BTU/CU.FT (WET) CORRECTED FOR	(1/Z)	1,573.0
REAL SPECIFIC GRAVITY		0.9408

ANALYSIS RUN AT 14.730 PSIA & 60 DEGREES F

DRY BTU @ 14.650	1,592.1
DRY BTU @ 14.696	1,597.1
DRY BTU @ 14.730	1,600.8
DRY BTU @ 15.025	1,632.9

CYLINDER #	AZT047
CYLINDER PRESSURE	15 PSIG
DATE RUN	12/26/00
ANALYSIS RUN BY	AMY JUSTICE

## CQM, INC. ON-SITE GAS ANALYSIS

T 2

1427 W. AZTEC BLVD. #3

AZTEC, NM 87410 505-333-2003

Source: ELKHORN FIELD SERVICE Report Date: 06/19/2001 14:36:40  
 Station #: 78-144 Sample Date: 06/14/2001  
 Station Name: MON/CAJON MESA Flowing Pressure: 0 psig  
 Field: RIM SOUTHWEST Flowing Temp.: 0 F

Method: c:\mti\ezchrom\200\methods\H2S\_1.MET

File: c:\mti\ezchrom\200\chrom\78\_14406.1

## Gas Analysis by Chromatograph

Name	Mole %	BTU	RD	GPM
Nitrogen	0.989	0.000	0.010	
Methane	63.867	646.549	0.354	
CO2	0.044	0.000	0.001	
Ethane	15.724	278.896	0.163	4.205
H2S (APPROX)	0.000	0.000	0.000	
Propane	9.810	247.400	0.149	2.703
i-Butane	1.181	38.494	0.024	0.386
n-Butane	3.638	118.957	0.073	1.147
i-Pentane	0.900	36.091	0.022	0.329
n-Pentane	1.247	50.107	0.031	0.452
Hexanes	1.943	92.621	0.058	0.799
Heptanes	0.514	28.348	0.018	0.237
Octanes	0.143	8.957	0.006	0.073
Nonanes	0.000	0.000	0.000	
Ideal Total	100.000	1546.420	0.908	10.332
Unnormalized Total	108.337			

Gross BTU/Real Cu. Ft.

(@ 60 deg F, 14.730)

Dry = 1555.948

Sat. = 1530.436

Actual = 1555.948

( 0.000 lbs. water/MMCF)

Gasoline Content

Propane GPM = 2.703

Butane GPM = 1.533

Gasoline GPM = 1.890

26# Gasoline GPM = 3.037

Total GPM = 10.332

Real Relative Density Calculated = 0.9133

On-Site Relative Density = 0.0000

Gas Compressibility = 0.9939



2030 AFTON PLACE  
 FARMINGTON, N.M. 87401  
 (505) 325-6622

ANALYSIS NO. HSC00018  
 CUST. NO. 33500- 10035

**WELL/LEASE INFORMATION**

<b>CUSTOMER NAME</b>	HARKEN SOUTHWEST CORP.	<b>SOURCE</b>	N/A
<b>WELL NAME</b>	BIG SKY 6E	<b>PRESSURE</b>	17 PSIG
<b>COUNTY/ STATE</b>	SAN JUAN UT	<b>SAMPLE TEMP</b>	21 DEG.F
<b>LOCATION</b>	ANETH	<b>WELL FLOWING</b>	Y
<b>FIELD</b>		<b>DATE SAMPLED</b>	12/23/00
<b>FORMATION</b>		<b>SAMPLED BY</b>	FGM
<b>CUST.STN.NO.</b>	202E430640	<b>FOREMAN/ENGR.</b>	STEVEN J. MANSUR

**REMARKS**

**ANALYSIS**

COMPONENT	MOLE %	GPM**	B.T.U.*	SP.GR *
NITROGEN	1.658	0.0000	0.00	0.0160
CO2	0.037	0.0000	0.00	0.0006
METHANE	66.226	0.0000	670.41	0.3668
ETHANE	17.222	4.6069	305.47	0.1788
PROPANE	9.526	2.6254	240.24	0.1450
I-BUTANE	1.012	0.3310	32.99	0.0203
N-BUTANE	2.724	0.8589	89.07	0.0547
I-PENTANE	0.496	0.1815	19.89	0.0124
N-PENTANE	0.553	0.2003	22.22	0.0138
HEXANE PLUS	0.546	0.2382	28.07	0.0176
<b>TOTAL</b>	<b>100.000</b>	<b>9.0422</b>	<b>1,408.36</b>	<b>0.8260</b>

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

\*\* @ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR	(1/Z)	1.0048
BTU/CU.FT (DRY) CORRECTED FOR	(1/Z)	1,415.4
BTU/CU.FT (WET) CORRECTED FOR	(1/Z)	1,390.8
REAL SPECIFIC GRAVITY		0.8302

ANALYSIS RUN AT 14.730 PSIA & 60 DEGREES F

DRY BTU @ 14.650	1,407.7	CYLINDER #	007
DRY BTU @ 14.696	1,412.2	CYLINDER PRESSURE	17 PSIG
DRY BTU @ 14.730	1,415.4	DATE RUN	12/28/00
DRY BTU @ 15.025	1,443.8	ANALYSIS RUN BY	GINA HANON

CQM, INC.  
1427 W. AZTEC, BLVD. #3 AZTEC, NM 87410  
505-333-2003

Source: ELKHORN FIELD SERVICE Report Date: 06/19/2001 12:14:41  
Station #: 78-132 Sample Date: 06/13/2001  
Station Name: HILLSIDE 6-C *Big Sky* Flowing Pressure: 0 psig  
Field: RIM SOUTHWEST Flowing Temp.: 0 F

Method: c:\mti\ezchrom\200\methods\sour2.met  
File: c:\mti\ezchrom\200\chrom\78\_13206.1

## Gas Analysis by Chromatograph

Name	Mole %	BTU	RD	GPM
Nitrogen	1.876	0.000	0.018	
Methane	65.826	666.381	0.365	
CO2	0.039	0.000	0.001	
Ethane	16.765	297.360	0.174	4.484
H2S (approx)	0.000	0.000	0.000	
Propane	9.827	247.829	0.150	2.708
i-Butane	0.865	28.194	0.017	0.283
n-Butane	2.514	82.204	0.050	0.793
i-Pentane	0.633	25.384	0.016	0.229
n-Pentane	0.787	31.623	0.020	0.288
Hexanes	0.689	32.844	0.021	0.283
Heptanes	0.166	9.155	0.006	0.077
Octanes	0.013	0.814	0.001	0.007
Ideal Total	100.000	1421.788	0.837	9.151
Unnormalized Total	94.894			

Gross BTU/Real Cu. Ft.  
(@ 60 deg F, 14.730)  
Dry = 1428.837  
Sat. = 1405.444  
Actual = 1428.837  
( 0.000 lbs. water/MMCF)

Gasoline Content  
Propane GPM = 2.708  
Butane GPM = 1.076  
Gasoline GPM = 0.884  
26# Gasoline GPM = 1.676  
Total GPM = 9.151

Real Relative Density Calculated = 0.8408  
On-Site Relative Density = 0.0000

Gas Compressibility = 0.9951

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Division of Oil, Gas and Mining  
**PHONE CONVERSATION DOCUMENTATION FORM**

Route original/copy to:

Well File \_\_\_\_\_  
 \_\_\_\_\_  
 (Loc.) Sec \_\_\_\_\_ Twp \_\_\_\_\_ Rng. \_\_\_\_\_  
 (API No.) \_\_\_\_\_

Suspense \_\_\_\_\_  
 (Return Date) \_\_\_\_\_  
 Other \_\_\_\_\_  
 (To-Initials) \_\_\_\_\_

1. Date of Phone Call: 9/12/01 Time: 9:50

2. DOGM Employee (name) Dustin Doucet ( Initiated Call)  
 Talked to:  
 Name Wayne Townsend ( Initiated Call) - Phone No. (505) 599 6359  
 of (Company/Organization) BLM

3. Topic of Conversation: Gas Flaring in Aneth area - bad western  
Gas Resources Pipeline <sup>due to</sup>

4. Highlights of Conversation: Wayne has had several meetings with  
Navajo Nation, Navajo EPA, Navajo minerals, Navajo Health and Human Services,  
the Department of Justice, US EPA, Texaco, Exxon-Mobil, western Gas in the  
Red Mesa in Aneth chapters. 12.5 miles of pipeline (downstream from  
Aneth Plant) no good. Options: a) rebuild 12.5 miles of pipeline - Row expires  
2005 westerns renegotiate with Navajo to extend Row westerns [man choice] 1 month  
to rebuild once ok given from Navajo etc. b) Use 20" Questar oil pipeline [1950's - no go]  
c) Use 6" Coroco Line - convert to gas and truck liquids from plant - talks broke down 9/10/01.  
Everyone in agreement to keep wells producing - some verbal complaints from public, nothing  
in writing yet. Red Mesa in Aneth chapters wanted full shut-in. Current plan: EPA sending  
Letter today to flare gas thru plant (gas will be metered). The gas will be counted as  
cost gas - no royalty due - because out of control of companies (producers). H<sub>2</sub>S and other  
safety monitors will be set up around plant and monitor health risks, etc - BLM  
has approved all flaring until Oct. 15, 2001 associated w/ this matter. Probably  
won't be back into operation before then though.

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB No. 1004-0135  
Expires November 30, 2000

**SUNDRY NOTICES AND REPORTS ON WELLS**  
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.*

**SUBMIT IN TRIPLICATE - Other instructions on reverse side**

1. Type of Well <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		5. Lease Serial No. <b>See Attached</b>
2. Name of Operator <b>RIM SOUTHWEST CORPORATION</b>		6. If Indian, Allottee or Tribe Name <b>Navajo Nation</b>
3a. Address <b>87499 P.O. Box 145, Farmington, NM</b>	3b. Phone No. (include area code) <b>(505) 327-5531</b>	7. If Unit or CA/Agreement, Name and/or No.
4. Location of Well (Footage, Sec., T., R., M., or Survey Description)		8. Well Name and No.
		9. API Well No.
		10. Field and Pool, or Exploratory Area
		11. County or Parish, State <b>San Juan county Utah</b>

**12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION			
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other <u>Vent/Flare</u>
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	<u>Gas</u>
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Please be advised that RIM Southwest Corporation is requesting additional approval to continue to vent/flare gas from the attached wells until December 1, 2001 or until the Aneth plant is put back on line, whichever occurs first. Please reference our previous sundry notice dated 8/29/01 which gave approval for this action through October 15, 2001.

Attachment  
**Accepted by the  
Utah Division of  
Oil, Gas and Mining**

COPY SENT TO OPERATOR

Date: 11/19/01  
Initials: WJH

Date: 11/19/01  
By: [Signature]  
Ex 2 Dec 1, 2001

Federal Approval of This  
Action Is Necessary

cc: State of Utah  
Navajo Nation-Minerals  
Navajo Nation EPA-Air  
Quality  
BIA - Gallup, NM

14. I hereby certify that the foregoing is true and correct  
Name (Printed/Typed)

**W. J. Holcomb**

Title **Vice President**

**RECEIVED**

Signature

[Signature]

Date **11/01/01**

**NOV 09 2001**

**DIVISION OF  
OIL, GAS AND MINING**

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by	Title	Date
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office	

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

RIM SOUTHWEST CORPORATION

			ESTIMATED GAS	
			VENTED	
LEASE NUMBER	WELL NAME	SEC-TWN-RNG	MCF/DAY	
1420603373	Big Sky 6E (6L)	06-42S-25E	19	43-037-31714
NOC 14205297				
(NMNM 5756)	Monument 8N-2	08-40S-25E	18	43-037-31509
(NMNM 5757)	Cajon Mesa 8D-1	08-40S-25E	0	43-037-31497
NOG 8308-1033	Navajo Tribal 23-13	13-40S-24E	23	43-037-30971
	Navajo Tribal 14-10	10-40S-24E	1	43-037-30977
	Navajo Tribal 41-2	02-42S-24E	8	43-037-31041
	Navajo Tribal 32-26	26-40S-22E	8	43-037-31060
NOG 8707-1162	Sahgzie #1	05-42S-24E	16	43-037-31472
	Anasazi #1	05-42S-24E	67	43-037-31478
NOG 8707-1170	Runway 10G-1	10-40S-25E	SI	43-037-31515
	Runway 10C-5A	10-40S-25E	SI	43-037-31597
NOG 8707-1190	Runway 10E-2	10-40S-25E	17	43-037-31550
NOG 8707-1191	Monument 17E-2	17-40S-25e	0	43-037-31547
NOG 8707-1206	Blue Hogan 1J-1	01-42S-23E	27	43-037-31562
	Brown Hogan 1A-2	01-42S-23E	18	43-037-31573
NOG 8707-12321	Burro 31-1	31-41S-24E	1	43-037-31708
	Jack 31G	31-41S-24E	SI	43-037-31709
	Mule 31K (N)	31-41S-24E	7	43-037-31617
	Mule 31M	31-41S-24E	24	43-037-31710
		<b>TOTAL AVERAGE</b>	<b>254</b>	

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

**FILE**

**SUNDRY NOTICES AND REPORTS ON WELLS**  
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

**SUBMIT IN TRIPLICATE - Other instructions on reverse side**

1. Type of Well  
 Oil Well  Gas Well  Other

2. Name of Operator  
**RIM SOUTHWEST CORPORATION**

3a. Address **87499**  
**P.O. Box 145, Farmington, NM**

3b. Phone No. (include area code)  
**(505) 327-5531**

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

5. Lease Serial No.  
**See Attached**

6. If Indian, Allottee or Tribe Name  
**Navajo Nation**

7. If Unit or CA/Agreement, Name and/or No.

8. Well Name and No.

9. API Well No.

10. Field and Pool, or Exploratory Area

11. County or Parish, State  
**San Juan County  
Utah**

**12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION			
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other <u>Flare Gas</u>
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

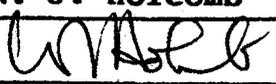
13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Please be advised that as of approximately 3:00 p.m. Thursday, November 15, 2001 the attached wells were put back on line for gas sales through the Aneth pipeline/plant.

CC: State of Utah  
 Navajo Nation-Minerals  
 Navajo Nation EPA - Air Quality  
 BIA - Gallup, NM

14. I hereby certify that the foregoing is true and correct

Name (Printed/Typed) **W. J. Holcomb** Title **Vice President**

Signature  Date **11/19/01**

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

**RECEIVED**

Approved by \_\_\_\_\_ Title \_\_\_\_\_ Date **NOV 23 2001**

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office **DIVISION OF OIL, GAS AND MINING**

## RIM SOUTHWEST CORPORATION

			<b>ESTIMATED GAS</b>	
			<b>VENTED</b>	
<b>LEASE NUMBER</b>	<b>WELL NAME</b>	<b>SEC-TWN-RNG</b>	<b>MCF/DAY</b>	
1420603373	Big Sky 6E (6L)	06-42S-25E	19	43-037-31714
NOC 14205297				
(NMNM 5756)	Monument 8N-2	08-40S-25E	18	43-037-31509
(NMNM 5757)	Cajon Mesa 8D-1	08-40S-25E	0	43-037-31497
NOG 8308-1033	Navajo Tribal 23-13	13-40S-24E	23	43-037-30971
	Navajo Tribal 14-10	10-40S-24E	1	43-037-30977
	Navajo Tribal 41-2	02-42S-24E	8	43-037-31041
	Navajo Tribal 32-26	26-40S-22E	8	43-037-31060
NOG 8707-1182	Sahzie #1	05-42S-24E	16	43-037-31472
	Anasazi #1	05-42S-24E	67	43-037-31478
NOG 8707-1170	Runway 10G-1	10-40S-25E	SI	43-037-31515
	Runway 10C-5A	10-40S-25E	SI	43-037-31597
NOG 8707-1190	Runway 10E-2	10-40S-25E	17	43-037-31550
NOG 8707-1191	Monument 17E-2	17-40S-25e	0	43-037-31547
NOG 8707-1206	Blue Hogan 1J-1	01-42S-23E	27	43-037-31562
	Brown Hogan 1A-2	01-42S-23E	18	43-037-31573
NOG 8707-12321	Burro 31-1	31-41S-24E	1	43-037-31708
	Jack 31G	31-41S-24E	SI	43-037-31709
	Mule 31K (N)	31-41S-24E	7	43-037-31617
	Mule 31M	31-41S-24E	24	43-037-31710
<b>TOTAL AVERAGE:</b>			<b>254</b>	

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB No. 1004-0135

50 Lease Serial No.  
NOG 8707-1231

6. If Indian, Allottee, or Tribe Name  
The Navajo Nation

7. If Unit or CA. Agreement Designation

8. Well Name and No.  
Mule 31-K(N)

9. API Well No.  
43-037-31617

10. Field and Pool, or Exploratory Area  
Desert Creek

11. County or Parish, State  
San Juan Co., Utah

**SUNDRY NOTICES AND REPORTS ON WELLS**

*Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.*

**SUBMIT IN TRIPLICATE - Other Instructions on reverse side**

1. Type of Well  
 Oil Well     Gas Well     Other

2. Name of Operator  
RIM Southwest Corporation

3a. Address  
5 Inverness Drive East, Englewood CO 80112

3b. Phone No. (include area code)  
303-799-9828

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
SW SW sec 31 T 41S R 24E

**12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION				
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/ Resume)	<input type="checkbox"/> Water Shut-off	
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Altering Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity	
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other <u>Return to production.</u>	
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and abandon	<input type="checkbox"/> Temporarily Abandon		
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug back	<input type="checkbox"/> Water Disposal		

13. Describe Proposed or Completed Operation (clearly state all pertinent details including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplate horizontally, give subsurface locations and measured and true vertical depths or pertinent markers and sands. Attach the Bond under which the work will performed or provide the Bond No. on file with the BLM/ BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notice shall be filed only after all requirements, including reclamantion, have been completed, and the operator has determined that the site is ready for final inspection.)

Returned to sales on Friday, August 29, 2008.

14. I hereby certify that the foregoing is true and correct.

Name (Printed/ Typed) **Kenneth J Kundrik** Title **Operations Engineer**

Signature *Kenneth Kundrik* Date **9/2/2008**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

ACCEPTED FOR RECORD  
SEP 09 2008

Approved by \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_

Office \_\_\_\_\_ BY \_\_\_\_\_

Title 18 U.S.C. Section 1001 AND Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on reverse)

FARMINGTON  
*Walt - OGD*

RECEIVED  
SEP 25 2008  
DIV. OF OIL, GAS & MINING



Division of Oil, Gas and Mining  
**OPERATOR CHANGE WORKSHEET (for state use only)**

**ROUTING**  
 CDW

**X - Change of Operator (Well Sold)**

Operator Name Change/Merger

The operator of the well(s) listed below has changed, effective:

**8/1/2012**

<b>FROM:</b> (Old Operator): N1715- RIM Southwest Corp P.O. Box 2058 Farmington, NM 87499  Phone: 1 (505) 327-5531	<b>TO:</b> ( New Operator): N2550- Navajo Nation Oil & Gas Company 1675 Broadway, Suite 1000 Denver, CO 80202  Phone: 1 (303) 534-8300
---	---

**CA No.**

**Unit:**

**N/A**

WELL NAME	SEC	TWN	RNG	API NO	ENTITY NO	LEASE TYPE	WELL TYPE	WELL STATUS
See Attached List								

**OPERATOR CHANGES DOCUMENTATION**

Enter date after each listed item is completed

- (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 9/19/2012
- (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 9/19/2012
- The new company was checked on the **Department of Commerce, Division of Corporations Database** on: 12/11/2012
- 4a. Is the new operator registered in the State of Utah: \_\_\_\_\_ Business Number: 7407010-0147
- 5a. (R649-9-2)Waste Management Plan has been received on: Requested
- 5b. Inspections of LA PA state/fee well sites complete on: N/A
- 5c. Reports current for Production/Disposition & Sundries on: 12/11/2012
- Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BLM BIA
- Federal and Indian Units:**  
The BLM or BIA has approved the successor of unit operator for wells listed on: N/A
- Federal and Indian Communization Agreements ("CA"):**  
The BLM or BIA has approved the operator for all wells listed within a CA on: N/A
- Underground Injection Control ("UIC")** Division has approved UIC Form 5 Transfer of Authority to **Inject**, for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: N/A

**DATA ENTRY:**

- Changes entered in the **Oil and Gas Database** on: 12/11/2012
- Changes have been entered on the **Monthly Operator Change Spread Sheet** on: 12/11/2012
- Bond information entered in RBDMS on: 12/11/2102
- Fee/State wells attached to bond in RBDMS on: N/A
- Injection Projects to new operator in RBDMS on: 12/11/2012
- Receipt of Acceptance of Drilling Procedures for APD/New on: N/A

**BOND VERIFICATION:**

- Federal well(s) covered by Bond Number: N/A
- Indian well(s) covered by Bond Number: RLB0006712
- 3a. (R649-3-1) The **NEW** operator of any state/fee well(s) listed covered by Bond Number N/A
- 3b. The **FORMER** operator has requested a release of liability from their bond on: N/A

**LEASE INTEREST OWNER NOTIFICATION:**

- (R649-2-10) The **NEW** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: N/A

**COMMENTS:**

RIM Southwest Corp (N1715) to Navajo Nation Oil Gas Company (N2550)  
Effective 8/1/2012

Well Name	Sec	TWP	RNG	API Number	Entity	Lease	Well Type	Well Status
SAHGZIE 1	05	420S	240E	4303731472	11032	Indian	OW	P
ANASAZI 1	05	420S	240E	4303731478	11042	Indian	OW	P
CAJON MESA 8D-1	08	400S	250E	4303731497	11074	Indian	OW	P
MONUMENT 8N-2	08	400S	250E	4303731509	11087	Indian	OW	P
RUNWAY 10G-1	10	400S	250E	4303731515	11105	Indian	OW	P
LONE MOUNTAIN CREEK 12F-1	12	420S	240E	4303731545	11148	Indian	OW	P
RUNWAY 10E-2	10	400S	250E	4303731550	11128	Indian	GW	P
BLUE HOGAN 1J-1	01	420S	230E	4303731562	11161	Indian	OW	P
ANASAZI 5L-3	05	420S	240E	4303731572	11207	Indian	OW	P
BROWN HOGAN 1A-2	01	420S	230E	4303731573	11215	Indian	OW	P
MULE 31K (N)	31	410S	240E	4303731617	11326	Indian	OW	P
BURRO 31I	31	410S	240E	4303731708	11496	Indian	OW	P
MULE 31M	31	410S	240E	4303731710	11498	Indian	OW	P
ANASAZI 6H-1	06	420S	240E	4303731744	11773	Indian	OW	P
MONUMENT 17E-2	17	400S	250E	4303731547	11139	Indian	OW	S
RUNWAY 10C-5A	10	400S	250E	4303731597	11152	Indian	OW	S

**STATE OF UTAH**  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

FORM 9

<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>		5. LEASE DESIGNATION AND SERIAL NUMBER: <b>11326</b>
Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		6. IF INDIAN, ALLOTTEE OR TRIBE NAME: <b>Navajo</b>
		7. UNIT or CA AGREEMENT NAME:
1. TYPE OF WELL OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER _____	8. WELL NAME and NUMBER: <b>Mule 31K (N)</b>	
2. NAME OF OPERATOR: <b>Navajo Nation Oil and Gas Company</b>	9. API NUMBER: <b>43-037-31617</b>	
3. ADDRESS OF OPERATOR: <b>P. O. Box 5069 Window Rock STATE AZ ZIP 86515</b>	PHONE NUMBER: <b>303-534-8300</b>	10. FIELD AND POOL, OR WILDCAT: <b>Greater Aneth</b>
4. LOCATION OF WELL FOOTAGES AT SURFACE: <b>1650 FSL &amp; 2030 FWL</b>		COUNTY: <b>San Juan</b>
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: <b>SW SW sec. 31 T41S R24E</b>		STATE: <b>UTAH</b>

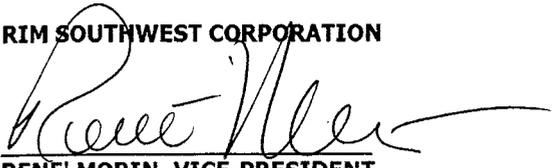
11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> <b>NOTICE OF INTENT</b> (Submit in Duplicate) Approximate date work will start: _____	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
<input checked="" type="checkbox"/> <b>SUBSEQUENT REPORT</b> (Submit Original Form Only) Date of work completion: _____	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input checked="" type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> OTHER: _____
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

**Navajo Nation Oil and Gas Company certifies that it is authorized by the proper lease interest owners to conduct operations associated with this application. Bond coverage pursuant to 43CFR3104 for lease activities is being provided by Navajo Nation Oil and Gas Company with their BIA Bond RLB0014524.**

**RIM Southwest Corporation the previous operator, hereby names Navajo Nation Oil and Gas Company as successor operator effective August 1, 2012**

**RIM SOUTHWEST CORPORATION**  
  
**RENE MORIN, VICE-PRESIDENT**

Bond No. **RLB 000 6712**

NAME (PLEASE PRINT) <u>Lauren Germinario</u>	TITLE <u>Land Manager</u>
SIGNATURE <u>Lauren Germinario</u>	DATE <u>8/1/12</u>

(This space for State use only)

**APPROVED**

DEC 11 2012

DIV. OIL GAS & MINING  
BY: Rachael Medina



Navajo Nations Oil Gas Co. (N2550) to NNOGC Exploration Production, LLC (N3930)  
Effective 8/1/2012

Well Name	Sec	TWP	RNG	API	Entity	Lease	Well Type	Well Status
TOHONADLA 26-OSCAR	26	410S	210E	4303750022		Indian	OW	APD
TOHONADLA 35-F	35	410S	210E	4303750024		Indian	OW	APD
TOHONADLA 2-G	02	420S	210E	4303750027		Indian	OW	APD
TOHONADLA 2-B	02	420S	210E	4303750028		Indian	OW	APD
TOHONADLA 1-C	01	420S	210E	4303750029		Indian	OW	APD
TOHONADLA 2-BRAVO	02	420S	210E	4303750030		Indian	OW	APD
TOHONADLA 1-F	01	420S	210E	4303750031		Indian	OW	APD
TOHONADLA 2-H	02	420S	210E	4303750032		Indian	OW	APD
TOHONADLA 1-Delta	01	420S	210E	4303750033		Indian	OW	APD
TOHONADLA 35-INDIGO	35	410S	210E	4303750034		Indian	OW	APD
TOHONADLA 35-J	35	410S	210E	4303750035		Indian	OW	APD
UTE CANYON 25G-O	25	410S	210E	4303731913	18823	Indian	OW	DRL
TOHONADLA 35-B	35	410S	210E	4303750023	18824	Indian	OW	DRL
UTE CYN 23-INDIGO	23	410S	210E	4303731880		Indian	OW	LA
TOHONADLA 35-P	35	410S	210E	4303731886		Indian	OW	LA
TOHONADLA 1-E	01	420S	210E	4303731887		Indian	OW	LA
TOHONADLA 1-D	01	420S	210E	4303731888		Indian	OW	LA
TOHONADLA 26-O	26	410S	210E	4303731896		Indian	OW	LA
UTE CYN 23-INDIGO	23	410S	210E	4303731911		Indian	OW	LA
NAVAJO TR 23-1	02	420S	210E	4303715540	6230	Indian	OW	P
DESERT CREEK 2	35	410S	230E	4303715868	6270	Indian	OW	P
TOHONADLA 1	35	410S	210E	4303715872	11202	Indian	OW	P
TOHONADLA 23-35	35	410S	210E	4303715874	11202	Indian	OW	P
NAVAJO TRIBAL 23-13	13	400S	240E	4303730971	9420	Indian	OW	P
NAVAJO TRIBAL 14-10	10	400S	240E	4303730977	10130	Indian	OW	P
SAHGZIE 1	05	420S	240E	4303731472	11032	Indian	OW	P
ANASAZI 1	05	420S	240E	4303731478	11042	Indian	OW	P
CAJON MESA 8D-1	08	400S	250E	4303731497	11074	Indian	OW	P
MONUMENT 8N-2	08	400S	250E	4303731509	11087	Indian	OW	P
RUNWAY 10G-1	10	400S	250E	4303731515	11105	Indian	OW	P
LONE MOUNTAIN CREEK 12F-1	12	420S	240E	4303731545	11148	Indian	OW	P
RUNWAY 10E-2	10	400S	250E	4303731550	11128	Indian	GW	P
BLUE HOGAN 1J-1	01	420S	230E	4303731562	11161	Indian	OW	P
TOHONADLA 2-35	35	410S	210E	4303731568	11202	Indian	OW	P
ANASAZI 5L-3	05	420S	240E	4303731572	11207	Indian	OW	P
BROWN HOGAN 1A-2	01	420S	230E	4303731573	11215	Indian	OW	P
MULE 31K (N)	31	410S	240E	4303731617	11326	Indian	OW	P
BURRO 31I	31	410S	240E	4303731708	11496	Indian	OW	P
MULE 31M	31	410S	240E	4303731710	11498	Indian	OW	P
ANASAZI 6H-1	06	420S	240E	4303731744	11773	Indian	OW	P
TOHONADLA 35-P	35	410S	210E	4303750005	11202	Indian	OW	P
TOHONADLA 1-E	01	420S	210E	4303750006	6230	Indian	OW	P
NAVAJO TRIBAL 41-2	02	420S	240E	4303731041	9437	Indian	OW	PA
MONUMENT 17E-2	17	400S	250E	4303731547	11139	Indian	OW	S
RUNWAY 10C-5A	10	400S	250E	4303731597	11152	Indian	OW	S
UTE CYN 23-P	23	410S	210E	4303731881	17282	Indian	OW	S

**NAVAJO NATION OIL & GAS COMPANY**

**EXPLORATION & PRODUCTION LLC**

1675 Broadway, Suite 1100 • Denver, Colorado • 80202

Telephone (303) 534-8300 • FAX (303) 534-1405



September 18, 2012

Utah Division of Oil, Gas and Mining  
c/o Rachel Medina  
1594 West North Temple, Suite 1210  
Salt Lake City, Utah 84114-5801

RE: Change of Operator Name and Address for Wells

Dear Rachel,

I am including with this letter several original FORM 9 to change the operator on wells. This probably will be done in two steps.

1. (16 wells) Change of Operator from RIM Southwest Corporation to Navajo Nation Oil & Gas Co.
2. (Same 16 wells) Change of Operator from Navajo Nation Oil & Gas Co. to NNOGC Exploration and Production, LLC.

We have recently registered our LLC with the State of Utah. The Utah Entity Number for NNOGC Exploration and Production, LLC is: 8399948-0165. Also, a new DOGM No. has been applied for for the LLC.

The name and address change is as follows:

OLD: Navajo Nation Oil & Gas Co.  
1675 Broadway, Suite 1100  
Denver, CO 80202  
(DOGM Operator No. N2550)

NEW: NNOGC Exploration and Production, LLC  
1625 Broadway, Suite 1000  
Denver, CO 80202

Should you require any additional information please contact me at 303-534-8300.

Sincerely,

A handwritten signature in black ink, appearing to read "Katie Hynes". The signature is fluid and cursive.

Katie Hynes  
Associate Landman

RECEIVED  
SEP 19 2012  
DIV. OF OIL, GAS & MINING

**STATE OF UTAH**  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

FORM 9

**SUNDRY NOTICES AND REPORTS ON WELLS**

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER _____		5. LEASE DESIGNATION AND SERIAL NUMBER: See Attached
2. NAME OF OPERATOR: Navajo Nation Oil & Gas Co.		6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo Nation
3. ADDRESS OF OPERATOR: 1675 Broadway, Suite 1100 CITY Denver STATE CO ZIP 80202		7. UNIT or CA AGREEMENT NAME:
4. LOCATION OF WELL FOOTAGES AT SURFACE: See Attached List		8. WELL NAME and NUMBER: See Attached
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:		9. API NUMBER: Various
		10. FIELD AND POOL, OR WILDCAT: Various
		COUNTY: San Juan
		STATE: UTAH

**11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: _____	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input checked="" type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
<input checked="" type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: _____	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> OTHER: _____
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

The Navajo Nation Oil and Gas Co. has registered its new entity with the State of Utah. The Operator Name and Address change applies to all wells currently operated by DOGM No. N2550 (see attachment).

The Utah Entity Number for the LLC is: 8399948-0165.

The new Entity is:

NNOGC Exploration and Production, LLC  
1625 Broadway, Suite 1000  
Denver, CO 80202

NEW DOGM No. : 3930

Bond No. RLB0006712

Effective: July 10, 2010

NAME (PLEASE PRINT) Lauren Germinario TITLE Land Manager  
SIGNATURE *Lauren Germinario* DATE 9/14/12  
**APPROVED**

(This space for State use only)

DEC 3 1 2012

RECEIVED

DIV. OIL GAS & MINING  
BY: Rachel Medina

SEP 17 2012

**STATE OF UTAH**  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

FORM 9

**SUNDRY NOTICES AND REPORTS ON WELLS**

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

<b>1. TYPE OF WELL</b> OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER _____		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> See Attached
<b>2. NAME OF OPERATOR:</b> Navajo Nation Oil & Gas Co		<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b> Navajo Nation
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 5069                      CITY Window Rock                      STATE AZ                      ZIP 86515		<b>7. UNIT or CA AGREEMENT NAME:</b>
<b>4. LOCATION OF WELL</b> FOOTAGES AT SURFACE: _____		<b>8. WELL NAME and NUMBER:</b> See Attached
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: _____		<b>9. API NUMBER:</b> Various
COUNTY: San Juan		<b>10. FIELD AND POOL, OR WILDCAT:</b> Various
STATE: UTAH		

**11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> <b>NOTICE OF INTENT</b> (Submit in Duplicate) Approximate date work will start: _____	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
<input checked="" type="checkbox"/> <b>SUBSEQUENT REPORT</b> (Submit Original Form Only) Date of work completion: _____	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input checked="" type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> OTHER: _____
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

**12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS.** Clearly show all pertinent details including dates, depths, volumes, etc.

The Navajo Nation Oil & Gas Co. has registered its new entity with the State of Utah. The name and address change applies to all the wells that have recently changed from RIM Southwest Corporation to Navajo Nation Oil & Gas Co. (DOGM No. N2550)

The Utah Entity Number for the LLC is: 8399948-0165

Note: A new DOGM No. has been applied for NNOGC Exploration and Production, LLC

Please see the attached list of wells that will now be operated by:

NNOGC Exploration and Production, LLC  
1625 Broadway, Suite 1000  
Denver, CO 80202

All of these work wells are covered by Bond No. RLB0006712

Effective: Aug 1, 2012

NAME (PLEASE PRINT) <u>Lauren Germinario</u>	TITLE <u>Land Manager</u>
SIGNATURE <u><i>Lauren Germinario</i></u>	DATE <u>9/18/2012</u>

This space for State use only) **APPROVED**

**DEC 31 2012**

DIV. OIL GAS & MINING

BY: Rachel Medina (See Instructions on Reverse Side)

RECEIVED  
SEP 19 2012  
DIV. OF OIL, GAS & MINING

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>  <b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> NOG-8707-1231
---	--

<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b> NAVAJO  <b>7. UNIT or CA AGREEMENT NAME:</b>
--	--

<b>1. TYPE OF WELL</b> Oil Well	<b>8. WELL NAME and NUMBER:</b> MULE 31K (N)
------------------------------------	---

<b>2. NAME OF OPERATOR:</b> NAVAJO NATION OIL & GAS CO	<b>9. API NUMBER:</b> 43037316170000
---	---

<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 4439 , Window Rock, AZ, 86515	<b>PHONE NUMBER:</b> 303 534-8300 Ext	<b>9. FIELD and POOL or WILDCAT:</b> DESERT CREEK
--	--	--

<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1650 FSL 2030 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NESW Section: 31 Township: 41.0S Range: 24.0E Meridian: S	<b>COUNTY:</b> SAN JUAN  <b>STATE:</b> UTAH
---	---

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input checked="" type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: <b>12/24/2012</b>	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
	<input type="checkbox"/> TUBING REPAIR	<input checked="" type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width: 100px;" type="text"/>

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

On vent as of December 24, 2012 due to operational issues to sales line.

**Accepted by the  
 Utah Division of  
 Oil, Gas and Mining**

**Date:** January 23, 2013

**By:** David K. Quist

<b>NAME (PLEASE PRINT)</b> Lauren Germinario	<b>PHONE NUMBER</b> 303 534-8300	<b>TITLE</b> Land Manager
<b>SIGNATURE</b> N/A	<b>DATE</b> 12/28/2012	

**STATE OF UTAH**  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>		5. LEASE DESIGNATION AND SERIAL NUMBER: <b>VARIOUS</b>
Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		6. IF INDIAN, ALLOTTEE OR TRIBE NAME: <b>NAVAJO</b>
1. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER _____		7. UNIT or CA AGREEMENT NAME:
2. NAME OF OPERATOR: <b>NNOGC EXPLORATION AND PRODUCTION, LLC</b>		8. WELL NAME and NUMBER: <b>SEE ATTACHED</b>
3. ADDRESS OF OPERATOR: P.O. BOX 4439 CITY <b>WINDOW ROCK</b> STATE <b>AZ</b> ZIP <b>86515</b>		9. API NUMBER: <b>ATTACHED</b>
PHONE NUMBER: <b>(303) 538-8300</b>		10. FIELD AND POOL, OR WILDCAT: <b>SEE ATTACHED</b>
4. LOCATION OF WELL FOOTAGES AT SURFACE:		COUNTY: <b>SAN JUAN</b>
QTR/QR, SECTION, TOWNSHIP, RANGE, MERIDIAN:		STATE: <b>UTAH</b>

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: _____	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input checked="" type="checkbox"/> VENT OR FLARE
<input checked="" type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: _____	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> OTHER: _____
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

**PLEASE SEE ATTACHED LIST OF WELLS THAT ARE CURRENTLY VENTING. THE LISTED WELLS WILL BE VENTING FOR A MINIMUM OF TWO MONTHS PENDING REPAIRS TO THE ANADARKO LINE.**

NAME (PLEASE PRINT) <b>LAUREN GERMINARIO</b>	TITLE <b>LAND MANAGER</b>
SIGNATURE	DATE <b>1/18/2013</b>

(This space for State use only)

Attachment to Form 9

API	Well Name	Type	Lease	Field	County	T-R	Section	Activity	MCF/day (avg)
43-037-31472	SANGZIE 1	Oil Well	NOG-8702-1162	GREATER ANETH	SAN JUAN	42S-24E	5	on vent 12/24/12	0
43-037-31478	ANASAZI 1	Oil Well	NOG-8702-1162	GREATER ANETH	SAN JUAN	42S-24E	5	on vent 12/24/12	17
43-037-31497	CAJON MESA 8D-1	Oil Well	NOOC-1420-5297	CAJON MESA	SAN JUAN	40S-25E	8	S/I, on vent 12/10/12	8
43-037-31509	MONUMENT 8N-2	Oil Well	NOOC-1420-5297	MONUMENT	SAN JUAN	40S-25E	8	S/I, on vent 12/10/12	11
43-037-31515	RUNWAY 10G-1	Oil Well	NOG-8707-1170	RUNWAY	SAN JUAN	40S-25E	10	S/I, on vent 12/10/12	3
43-037-31547	MONUMENT 17E-2	Oil Well	NOG-8707-1191	MONUMENT	SAN JUAN	40S-25E	17	S/I, on vent 12/10/12	0
43-037-31550	RUNWAY 10E-2	Gas Well	NOG-8707-1190	RUNWAY	SAN JUAN	40S-25E	10	S/I, on vent 12/10/12	19
43-037-31562	BLUE HOGAN 1J-1	Oil Well	NOG-8707-1206	DESERT CREEK	SAN JUAN	42S-23E	1	on vent 12/24/12	8
43-037-31572	ANASAZI 5L-3	Oil Well	NOG-8707-1163	GREATER ANETH	SAN JUAN	42S-24E	5	on vent 12/24/12	6
43-037-31573	BROWN HOGAN 1A-2	Oil Well	NOG-8707-1206	DESERT CREEK	SAN JUAN	42S-23E	1	on vent 12/24/12	8
43-037-31617	MULE 31K (N)	Oil Well	NOG-8707-1231	DESERT CREEK	SAN JUAN	41S-24E	31	on vent 12/24/12	1
43-037-31710	MULE 31M	Oil Well	NOG-8707-1231	DESERT CREEK	SAN JUAN	41S-24E	31	on vent 12/24/12	8
43-037-31744	ANASAZI 6H-1	Oil Well	NOG-8707-1163	GREATER ANETH	SAN JUAN	42S-24E	6	on vent 12/24/12	0

Well does not produce gas

Well is currently s/i

Well does not produce gas

NOTE: The listed wells will be on vent for a minimum of 2 months pending repairs to the Anadarko line.

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	FORM 9  5. LEASE DESIGNATION AND SERIAL NUMBER: NOG-8707-1231
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NAVAJO  7. UNIT or CA AGREEMENT NAME:
1. TYPE OF WELL Oil Well	8. WELL NAME and NUMBER: MULE 31K (N)
2. NAME OF OPERATOR: NNOGC EXPLORATION & PRODUCTION, LLC	9. API NUMBER: 43037316170000
3. ADDRESS OF OPERATOR: 1625 Broadway, Suite 1000 , Denver , CO, 80202	PHONE NUMBER: 303 910-9525 Ext
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1650 FSL 2030 FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NESW Section: 31 Township: 41.0S Range: 24.0E Meridian: S	9. FIELD and POOL or WILDCAT: DESERT CREEK  COUNTY: SAN JUAN  STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start: 6/16/2014  <input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:  <input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:  <input type="checkbox"/> <b>DRILLING REPORT</b> Report Date:	<input type="checkbox"/> ACIDIZE  <input type="checkbox"/> CHANGE TO PREVIOUS PLANS  <input type="checkbox"/> CHANGE WELL STATUS  <input type="checkbox"/> DEEPEN  <input type="checkbox"/> OPERATOR CHANGE  <input type="checkbox"/> PRODUCTION START OR RESUME  <input type="checkbox"/> REPERFORATE CURRENT FORMATION  <input type="checkbox"/> TUBING REPAIR  <input type="checkbox"/> WATER SHUTOFF  <input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> ALTER CASING  <input type="checkbox"/> CHANGE TUBING  <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS  <input type="checkbox"/> FRACTURE TREAT  <input type="checkbox"/> PLUG AND ABANDON  <input type="checkbox"/> RECLAMATION OF WELL SITE  <input type="checkbox"/> SIDETRACK TO REPAIR WELL  <input type="checkbox"/> VENT OR FLARE  <input type="checkbox"/> SI TA STATUS EXTENSION  <input checked="" type="checkbox"/> OTHER	<input type="checkbox"/> CASING REPAIR  <input type="checkbox"/> CHANGE WELL NAME  <input type="checkbox"/> CONVERT WELL TYPE  <input type="checkbox"/> NEW CONSTRUCTION  <input type="checkbox"/> PLUG BACK  <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION  <input type="checkbox"/> TEMPORARY ABANDON  <input type="checkbox"/> WATER DISPOSAL  <input type="checkbox"/> APD EXTENSION  OTHER: <input type="text" value="Polish rod replacement"/>

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

NNOGC respectfully submits this sundry as notice of Rod Repair on the above well. Attached are the procedures & schematic. If there are any questions with this submission please contact me at 505-215-5878

**Accepted by the  
 Utah Division of  
 Oil, Gas and Mining  
 June 16, 2014**

Date: \_\_\_\_\_

By: David K. Quist

<b>NAME (PLEASE PRINT)</b> Timothy Phillips	<b>PHONE NUMBER</b> 505 599-6060	<b>TITLE</b> Petroleum Engineer
<b>SIGNATURE</b> N/A	<b>DATE</b> 6/8/2014	



# Navajo Nation Oil and Gas Company

*"The premier Native American Energy company"*

Greater Aneth Unit

1650 FSL & 2030 FWL

SW SW sec. 31 31 T41S R24E

API 43-037-31617

Mule 31 K (N) Polish Rod Replacement and pump inspection

## WO Procedure

1. MIRU Tyonek. Utilize LOTO procedures during horse head removal.
2. Kill well as necessary.
3. Pick up SB rods, uncoupling from on/off tool. Inspect pump. Unseat TBG anchor and SB tubing (inspect tubing) (verify seat nipple depth) Redress if pump & TBG hanger if necessary.
5. Run TBG pump & rods back in hole. 4. Replace 1-1/2" polish rod (22')
6. Re-engage on/off tool
7. Long stroke pump to test for good pumping action & PT Tubing to 1000 psi +
8. Replace packing in stuffing box, Leave enough polished rod for operators to correctly space pump as required.
9. Notify Tim Phillips (505)-215-5878 upon work completion and inspection that the well will return to production.
10. RDMOL. Call for hot oil treatment if necessary.

WELL: Mule 31K COUNTY: San Juan / API #: 43-037-31617  
 FIELD: Aneth STATE: UT SPUD DATE: 3/8/97  
 FORMATION: Desert Creek LOCATION: SWSW, Sec. 31, T41S-R24E  
 TD: 7,044' PBTD: 6,090' ELEVATION: GL= 4,939', KB= 4,952'

**CASING RECORD**

**SURFACE CASING**

O.D.	WT./FT.	GRADE	THD	TOP	BTM	NO. JTS.	BIT SZ.	SX CMT.	TOP CMT.
8-5/8"	23.0#	K-55	ST&C	Surface	520'	12	12-1/4"	375	Surface

**PRODUCTION CASING**

O.D.	WT./FT.	GRADE	THD	TOP	BTM	NO. JTS.	BIT SZ.	SX CMT.	TOP CMT.
5-1/2"	15.5#	J-55	LT&C	Surface	6162'	148	7-7/8"	1st Stg=635	Unknown
								2nd Stg=961	Unknown

**LINER**

O.D.	WT./FT.	GRADE	THD	TOP	BTM	NO. JTS.	BIT SZ.	SX CMT.	TOP CMT.

**TUBING**

O.D.	WT./FT.	GRADE	THD	TOP	BTM	NO. JTS.	BIT SZ.
2-7/8"	6.5#	J-55	8 rd	Surface	5859.27	183	4-3/4"

**PERFORATION RECORD**

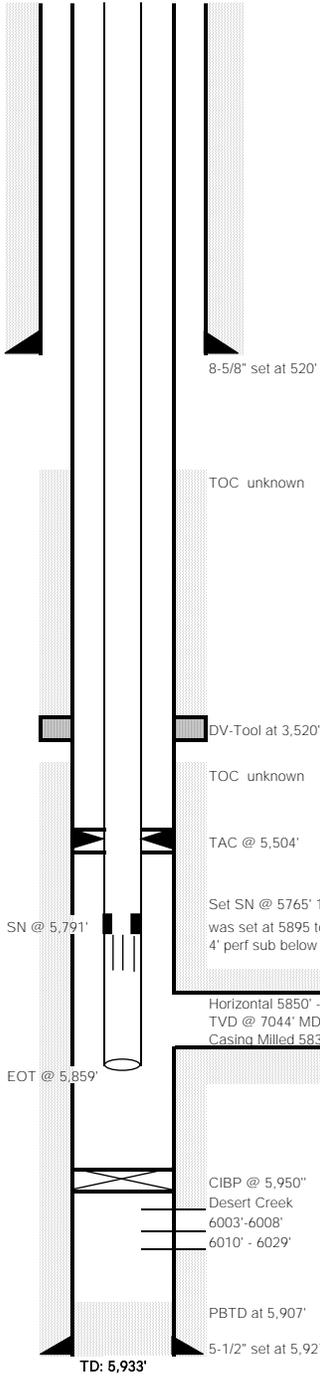
DATE	TOP	BOTTOM	SPF	ZONE	STATUS
04/08/97	5850'	6960'	OH	D. Creek	Open

**TREATMENT**

11/16/92 Perf 6003' - 6008' & 6010' 6029' Desert Creek  
 3/9/97 Set CIBP 5950'  
 Horizontal drill 5850' to 7044'  
 4/8/97 Acidized horizontal from 6960' to 5980' with 9000 gals 15% HCL  
 Casing Milled 5831 - 5875' do not set tubing in open hole

**REMARKS**

Tubing Detail	Rod Detail
172 Jts. of 2-7/8", 6.5#/ft J-55 EUE 8rd Tbg.	1 1/2" x 30' polish rod
TAC @ 5,504'	7/8" 6', 2' & 3 - 4' pony rods
9 Jts. of Tbg. 2 7/8" 6.7# (284.57)	93 - 7/8"
SN @ 5,791.39' ID 2 1/4"	137 - 3/4"
4 ft. perf'd sub	13 - 1" w/ 2' - 1" pony
BPMA, EOT @ 5,859' 2 lts 2 7/8" 6.7#/ft	Pump: 2-1/2" x 1-1/4" x 14" X 18" RHAC
Surface Location: 1,650' FSL - 2,030' FWL	
Lease #: NOG 8707-1231 / Navajo Tribal	
PU Lufkin Mill 640-305-168, Ajax DP 60 Stroke length 131 inches, 3-hole bottom, short stroke. 3.7 SPM	



**MISCELLANEOUS**

RIM Wt%:	
BHT:	
BHP:	
EST SITP:	
LOGS:	

**CAPACITIES**

Tubular Cap.	Bbl/ft	Ft3/ft
	Tubing	0.00579
Casing (15.5 #/ft)	0.02380	0.13360
Annular Cap.	Bbl/ft	Ft3/ft
	Tbg x Csg (15.5 #/ft)	0.01580
Csg x Open Hole	0.03090	0.17320

**TUBULAR GOODS PERFORMANCE**

Material	Tensile (lbs)	Burst (psi)	Collapse (psi)	ID (in)	Drift (in)
5-1/2", 15.5# J-55 ST&C	217,000	4,810	4,040	4.950	4.825
2-7/8", 6.5# J-55 8rd Coupling OD = 3.668"	99,660	7,260	7,680	2.441	2.347

Prepared By: kjk  
 Date: 04/29/02  
 Updated: 06/16/14